#3

Access DB# 195805

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Sin J. Lee Examiner #: 76060 Date: 7-12-06
Art Unit: 1752 Phone Number 30 2-7333 Serial Number: 10/657,350
Mail Box and Bldg/Room Location: 9C15 (Rem.) Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Plz. See B-6.

SCIENTIFIC REFERENCE BR
Sci & Tech Inf. Ctr.
JUL 17 [illegible]
Pat. & T.M. Office

Inventors (please provide full names):

Earliest Priority Filing Date:

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please search for the inventor of

Cl. # 26.

See P59–157 for answers

****

STAFF USE ONLY	Type of Search		Vendors and cost where applicable	
Searcher: MQH	NA Sequence (#)		STN	✓
Searcher Phone #:	AA Sequence (#)		Dialog	
Searcher Location:	Structure (#)	1	Questel/Orbit	
Date Searcher Picked Up:	Bibliographic		Dr.Link	
Date Completed: 7/18/06	Litigation		Lexis/Nexis	
Searcher Prep & Review Time:	Fulltext		Sequence Systems	
Clerical Prep Time:	Patent Family		WWW/Internet	
Online Time:	Other		Other (specify)	

PTO-1590 (8-01)

Access DB# 195804

#3

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Sin J. Lee Examiner #: 76060 Date: 7-12-06

Art Unit: 1752 Phone Number 30 2-1333 Serial Number: 10/657,350

Mail Box and Bldg/Room Location: 9C15 Results Format Preferred (circle): (PAPER) DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need. (Rem.)

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Pl2. Lee B.b.

Inventors (please provide full names):

Earliest Priority Filing Date:

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Please search for the inventor of cl. #1 or cl. #15. (or cl. #25) (or cl. #35)

↳ They are basically the same inventors

STAFF USE ONLY	Type of Search		Vendors and cost where applicable	
Searcher: MDH	NA Sequence (#)		STN	✓
Searcher Phone #:	AA Sequence (#)		Dialog	
Searcher Location:	Structure (#)		Questel/Orbit	
Date Searcher Picked Up:	Bibliographic		Dr.Link	
Date Completed: 7/18/06	Litigation		Lexis/Nexis	
Searcher Prep & Review Time:	Fulltext	✓	Sequence Systems	
Clerical Prep Time:	Patent Family		WWW/Internet	
Online Time:	Other		Other (specify)	

PTO-1590 (8-01)

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Bib Data Sheet

CONFIRMATION NO. 1646

SERIAL NUMBER	FILING DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
10/657,350	09/08/2003 RULE	430	1752	1792A1

APPLICANTS

Cheri M. Boykin, Wexford, PA;

Chia-Cheng Lin, Allison Park, PA;

** CONTINUING DATA **********

This appln claims benefit of 60/411,796 09/18/2002 SJL

** FOREIGN APPLICATIONS **********

None SJL

IF REQUIRED, FOREIGN FILING LICENSE GRANTED
** 12/13/2003

Foreign Priority claimed	STATE OR	SHEETS	TOTAL	INDEPENDENT
☐ yes ☑ no	COUNTRY	DRAWING	CLAIMS	CLAIMS
35 USC 119 (a-d) conditions met ☐ yes ☐ no ☐ Met after Allowance	PA	2	40	6
Verified and Acknowledged Examiner's Signature Initials SJL				

ADDRESS
PPG INDUSTRIES, INC.
INTELLECTUAL PROPERTY DEPT.
ONE PPG PLACE
PITTSBURGH , PA
15272

TITLE
Demonstration kit and method for enhancing and/or demonstrating photoactive properties

FILING FEE	FEES: Authority has been given in Paper	☐ All Fees
RECEIVED 1492	No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	☐ 1.16 Fees (Filing)
		☐ 1.17 Fees (Processing Ext. of time)
		☐ 1.18 Fees (Issue)

AMENDMENTS TO THE CLAIMS

Listing of Claims

1. (currently amended). A method of simulating photoactive properties on a surface, comprising:

providing a surface;

depositing a photoactive coating comprising titania over at least a portion of the substrate to provide the photoactive surface; and

applying at least one peroxide-containing material over at least a portion of the surface.

2. (cancel)

3. (cancel)

4. (cancel)

5. (original) The method of claim 1, wherein the peroxide-containing material includes hydrogen peroxide.

6. (original) The method of claim 1, wherein the peroxide-containing material is an aqueous solution of hydrogen peroxide.

7. (original) The method of claim 6, wherein the aqueous solution comprises 1 wt.% to 30 wt.% hydrogen peroxide.

8. (original) The method of claim 3, wherein the photoactive coating has a thickness in the range of 10 Å to 5000 Å.

9. (original) The method of claim 1, including drying the substrate with the peroxide-containing material.

10. (currently amended) The method of claim 14, wherein the titania is at least partially crystalline.

11. (currently amended) The method of claim 14, wherein the applying step includes:

applying the peroxide-containing material to an applicator; and

wiping the applicator over the surface until a substantially uniform layer of the peroxide-containing material is on the surface.

12. (original) The method of claim 1, including applying an at least partly hydrolyzed polyalkoxysiloxane material over at least a portion of the surface.

13. (original) The method of claim 12, when the polyalkoxysiloxane material comprises at least one at least partly hydrolyzed material selected from

polymethoxysiloxane, polyethoxysiloxane, polypropoxysiloxane, polybutoxysiloxane, and mixtures thereof.

14. (original) The method of claim 12, including drying the polyalkoxysiloxane material for 3 minutes to 60 minutes.

15. (currently amended) A method of demonstrating hydrophilicity of a photoactive surface by exposing the surface to electromagnetic radiation having one or more wavelengths of visible light, comprising:

providing a substrate having a photoactive surface comprising titania; and

applying at least one peroxide-containing material over at least a portion of the surface.

16. (original) The method of claim 15, wherein the photoactive surface is a UV photoactive surface.

17. (original) The method of claim 15, including applying at least one at least partly hydrolyzed polyalkoxysiloxane material over at least a portion of the surface.

18. (original) The method of claim 17, including applying the polyalkoxysiloxane material to have a dry film thickness in the range of 1 nm to 5 nm.

19. (original) The method of claim 17, wherein the polyalkoxysiloxane material is an aqueous solution comprising less than or equal to 0.5 wt.% of at least partly hydrolyzed polyalkoxysiloxane.

20. (original) The method of claim 17, wherein the polyalkoxysiloxane material is an aqueous solution comprising about 0.1 wt.% to 0.2 wt.% at least partly hydrolyzed polyalkoxysiloxane.

21. (original) The method of claim 17, wherein the polyalkoxysiloxane material includes at least one at least partly hydrolyzed material selected from polymethoxysiloxane, polyethoxysiloxane, polypropoxysiloxane, polybutoxysiloxane, and mixtures thereof.

22. (original) The method of claim 17, wherein the peroxide material includes hydrogen peroxide.

23. (original) The method of claim 22, wherein the peroxide material is an aqueous solution comprising 1 wt.% to 30 wt.% hydrogen peroxide.

24. (original) The method of claim 15, wherein the photoactive surface comprises crystalline titania.

25. (original) A method of activating a photoactive coating using visible light, comprising:

providing a photoactive surface comprising titania; and

applying an aqueous solution comprising 1 wt.% to 30 wt.% hydrogen peroxide over the photoactive surface.

26. (original) A method of simulating photoactive hydrophilicity on a surface, comprising:

depositing a photoactive coating over at least a portion of the substrate to provide the photoactive surface; and

contacting the surface with an at least partly hydrolyzed polyalkoxysiloxane material.

27. (original) The method of claim 26, wherein the polyalkoxysiloxane material includes at least one at least partly hydrolyzed material selected from polymethoxysiloxane, polyethoxysiloxane, polypropoxysiloxane, polybutoxysiloxane, and mixtures thereof.

28. (withdrawn) A kit for demonstrating hydrophilicity of a surface, comprising:

a container comprising an aqueous peroxide material; and

at least one applicator.

29. (withdrawn) The kit of claim 28, including a substrate having a surface, with at least a portion of the surface having a photoactive material located thereon.

30. (withdrawn) The kit of claim 28, including a container comprising conditioned water.

31. (withdrawn) The kit of claim 28, including a container comprising a glass cleaning solution.

32. (withdrawn) The kit of claim 28, including at least one applicator.

33. (withdrawn) The kit of claim 28, including a container comprising an aqueous solution containing at least one at least partly hydrolyzed polyalkoxysiloxane material.

34. (withdrawn) The kit of claim 33, wherein the solution comprises from 0.1 wt.% to 5 wt.% of at least partly hydrolyzed polymethoxysiloxane.

35. (currently amended) An article, comprising:

a surface having a photoactive coating comprising titania; and

at least one peroxide-containing material deposited over the surface.

36. (cancel)

37. (currently amended) The article of claim 35~~36~~, wherein the photoactive material includes at least one at least partly hydrolyzed material selected from polymethoxysiloxane, polyethoxysiloxane, polypropoxysiloxane, polybutoxysiloxane, and mixtures thereof.

38. (original) The article of claim 35, further including at least one at least partly hydrolyzed polyalkoxysiloxane material deposited over the surface.

39. (original) The article of claim 38, wherein the polyalkoxysiloxane material includes at least one at least partly hydrolyzed material selected from polymethoxysiloxane, polyethoxysiloxane, polypropoxysiloxane, polybutoxysiloxane, and mixtures thereof.

40. (currently amended) The article of claim 35, wherein ~~the surface comprises titania and~~ the peroxide-containing material comprises hydrogen peroxide.

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     (FILE 'HOME' ENTERED AT 15:20:37 ON 18 JUL 2006)

     FILE 'HCAPLUS' ENTERED AT 15:21:40 ON 18 JUL 2006
                E US20040096774/PN
L1            1 SEA US2004096774/PN
                D SCA

     FILE 'REGISTRY' ENTERED AT 15:22:19 ON 18 JUL 2006
L2                SCR 2043
L3                STR
L4                STR
L5                SCR 974
L6         5245 SEA SSS FUL (L4 NOT L3 NOT L5) AND L2

     FILE 'HCAPLUS' ENTERED AT 15:22:41 ON 18 JUL 2006
L7        11590 SEA L6

     FILE 'REGISTRY' ENTERED AT 15:23:54 ON 18 JUL 2006
L8            1 SEA TITANIA/CN
L9            1 SEA 7722-84-1/RN

     FILE 'HCAPLUS' ENTERED AT 15:24:25 ON 18 JUL 2006
L10      257079 SEA L8 OR (TITANIUM OR TI)(W)(OXIDE# OR DIOXIDE#) OR
                TITANIA OR TIO2
L11      193929 SEA L9 OR HYDROGEN(W)PEROXIDE# OR H2O2 OR HOOH
L12      226039 SEA PHOTOACTIV? OR PHOTORX## OR PHOTOREACT? OR PHOTOSENS?
                 OR (PHOTO OR LIGHT OR PHOTOLY? OR ULTRAVIOLET? OR
                ULTRA(W)VIOLET? OR UV# OR SUV OR LUV OR RADIA?)(2A)(ACTIV
                ? OR RX# OR RXN# OR REACT? OR SENSITI?)
L13        3437 SEA L10 AND L11
L14         326 SEA L13 AND L12
L15     2431673 SEA SURFACE?
L16          84 SEA L14 AND L15
L17             QUE (74 OR 76)/SC,SX
L18          44 SEA L16 AND L17
                E COATING/CV
                E COATINGS/CV
L19       35747 SEA "COATING(S)"/CV
L20        7724 SEA COATINGS/CV
L21      129536 SEA COATING PROCESS/CV
L22      278741 SEA COATING MATERIALS/CV
L23           1 SEA L16 AND (L19 OR L20 OR L21 OR L22)
                D SCA
L24           4 SEA L14 AND (L19 OR L20 OR L21 OR L22)
L25          32 SEA L18 AND (1840-2002)/PY,PRY
L26          46 SEA POLYALKOXYSILOXANE# OR POLYALKOXY(A)SILOXANE# OR
                POLY(A)ALKOXY(A)SILOXANE#
L27          28 SEA POLYMETHOXYSILOXANE# OR POLYMETHOXY(A)SILOXANE# OR
                POLY(A)METHOXY(A)SILOXANE#
L28          56 SEA POLYETHOXYSILOXANE# OR POLYETHOXY(A)SILOXANE# OR
                POLY(A)ETHOXY(A)SILOXANE#
L29           0 SEA POLYPROPOXYSILOXANE# OR POLYPROPOXY(A)SILOXANE# OR
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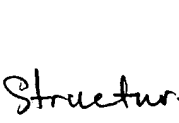
Structure for  polyalkoxysiloxane

Claim 26

```
                POLY(A)PROPOXY(A)SILOXANE#
L30           4 SEA POLYBUTOXYSILOXANE# OR POLYBUTOXY(A)SILOXANE# OR
                POLY(A)BUTOXY(A)SILOXANE#
L31         218 SEA (L26 OR L7) AND L12
L32          57 SEA L31 AND L15
L33          10 SEA L32 AND ((L19 OR L20 OR L21 OR L22))
L34          45 SEA L31 AND ((L19 OR L20 OR L21 OR L22))
L35          18 SEA L34 AND L17
L36           1 SEA (L27 OR L28 OR L30) AND L12
L37      161626 SEA HYDROPHIL? OR LYOPHIL? OR (WATER OR H2O)(2A)(ABSORB?
                OR ADSORB?)
L38          20 SEA L31 AND L37
L39       17149 SEA (PARTLY OR PARTIAL? OR SEMI OR INCOMPLET?)(2A)HYDROLY
                ?
L40           6 SEA L31 AND L39
L41             QUE IMPROV? OR MODIF? OR BOOST? OR ENHANC? OR INCREAS?
                OR ORNAMENT? OR INTENSIF? OR MAGNIF?
L42       62966 SEA L12 AND L41
L43         136 SEA L42 AND L13
L44          54 SEA L43 AND L17
L45          20 SEA L44 AND L15
L46           1 SEA L45 AND ((L19 OR L20 OR L21 OR L22))
                D SCA
L47           4 SEA L23 OR L24
L48           4 SEA L47 OR L46
L49          31 SEA L25 NOT L48
L50          17 SEA L40 OR L33 OR L36
L51          14 SEA L35 NOT L50
L52          15 SEA L38 NOT (L33 OR L35 OR L36 OR L40)

     FILE 'REGISTRY' ENTERED AT 16:09:11 ON 18 JUL 2006


=>  d l6 que stat
L2              SCR 2043
L3              STR

C==C
1   2

NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS   2

STEREO ATTRIBUTES: NONE
L4              STR

   3
   O~Ak
   ~  4
   ~
G1X Si
1     2

VAR G1=O/CL
NODE ATTRIBUTES:
CONNECT IS E1  RC AT   4
```

DEFAULT MLEVEL IS ATOM
GGCAT IS SAT AT 4
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 4

STEREO ATTRIBUTES: NONE
L5 SCR 974
L6 5245 SEA FILE=REGISTRY SSS FUL (L4 NOT L3 NOT L5) AND L2

100.0% PROCESSED 23209 ITERATIONS 5245 ANSWERS
SEARCH TIME: 00.00.01

=> fil hcap
FILE 'HCAPLUS' ENTERED AT 16:09:42 ON 18 JUL 2006
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=> d l48 ibib abs hitstr hitind 1-4

L48 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:549746 HCAPLUS
DOCUMENT NUMBER: 141:90588
TITLE: Titanium-based inorganic coatings with good storage stability, coating process therefor, and articles coated therewith
INVENTOR(S): Nagai, Akinori; Akui, Jun; Kogure, Hideo; Isozaki, Satoru
PATENT ASSIGNEE(S): Kansai Paint Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004189803	A2	20040708	JP 2002-357177	20021209

PRIORITY APPLN. INFO.: JP 2002-357177 20021209

OTHER SOURCE(S): MARPAT 141:90588
AB The coatings comprise (A) aq. solns. of Ti compds. (e.g., peroxytitanic acid) prepd. by mixing hydrolyzable Ti compds., Ti hydroxide, or their low condensates with aq. **H2O2** (in the presence of **titania** sol) and (B) acetanilide, phenacetin, and/or oxyquinoline. The coatings are applied on articles and dried to give coating layers with thickness 0.001-20 μm, showing **photoactivity**, hydrophilicity, corrosion resistance, soiling

resistance, etc. Thus, NH3 was dropped in an aq. TiCl4 soln. to give pptd. Ti hydroxide, which was washed, mixed with aq. **H2O2** and then with acetanilide, applied on a steel plate, and baked to give a coating showing good adhesiveness and no corrosion.

IT **13463-67-7P, Titania**, uses
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(titanium-based anticorrosive coatings contg. acetanilide, phenacetin, and/or oxyquinoline and showing good storage stability)

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IC ICM C09D001-00
ICS B05D007-24; C09D005-00; C09D185-00
CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 55
ST anticorrosive coating titanium hydroxide **hydrogen peroxide titania**; titanium coating acetanilide phenacetin oxyquinoline storage stability; steel anticorrosive coating peroxytitanic acid
IT **Coating materials**
(anticorrosive; titanium-based anticorrosive coatings contg. acetanilide, phenacetin, and/or oxyquinoline and showing good storage stability)
IT **13463-67-7P, Titania**, uses
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(titanium-based anticorrosive coatings contg. acetanilide, phenacetin, and/or oxyquinoline and showing good storage stability)

L48 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:517787 HCAPLUS
DOCUMENT NUMBER: 142:186345
TITLE: **Titanium dioxide** sol-gel deposited over glass and its application as a photocatalyst for water decontamination
AUTHOR(S): Gelover, Silvia; Mondragon, Pedro; Jimenez, Antonio
CORPORATE SOURCE: Instituto Mexicano de Tecnologia del Agua, Morelos, 62550, Mex.
SOURCE: Journal of Photochemistry and Photobiology, A: Chemistry (2004), 165(1-3), 241-246
CODEN: JPPCEJ; ISSN: 1010-6030
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Photocatalytic degrdn. of water pollutants using **TiO2** and solar light has been proposed as an effective alternative of treatment. Usually, **TiO2** as a finely divided powder is added to polluted water forming a suspension, which is then irradiated under sunlight to conduct photochem. reactions. Although the literature frequently points out the minor efficiency of immobilized systems, it is desirable to look for a fixed catalyst to

avoid wastes of time and materials during sepn. of the powder at the end of the treatment. This paper presents results that show the use of anatase thin films as an efficient form of deposited **TiO2** for the photocatalytic degrdn. of 4-chlorophenol, a priority pollutant commonly used as a model in photocatalysis, and for carbaryl, a carbamic pesticide. The thin films were deposited over small cylindrical pieces of glass, using a sol-gel technique, the av. thickness being 600 nm, and having a band gap of 3.28 eV. The anatase **TiO2**-covered glasses were used to fill a cylindrical **photoreactor** located at the focus of a parabolic solar collector able to conc. up to 41 suns. Results show that the films are an effective catalyst in photodegrdn., under solar irradn., and conduct to similar values as those for **TiO2** in suspension. The photoefficiency obtained is similar to that obtained using powder suspension. These results compel us to the continued pursuit of **TiO2** immobilization.

IT **13463-67-7, Titanium dioxide**, properties
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
(anatase-type; glass-supported anatase thin film photocatalyst and its application as for water decontamination)

RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

IT **7722-84-1, Hydrogen peroxide**, uses
RL: NUU (Other use, unclassified); USES (Uses)
(glass-supported anatase thin film photocatalyst and its application as for water decontamination)

RN 7722-84-1 HCAPLUS

CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)

CC 74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 61, 67

ST **titanium dioxide** sol gel deposited glass photocatalyst water decontamination; solar detoxification water glass support **titania** photocatalyst

IT **Coating process**
(sol-gel; prepn. of glass-supported anatase thin film photocatalyst for water decontamination)

IT **13463-67-7, Titanium dioxide**, properties
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
(anatase-type; glass-supported anatase thin film photocatalyst and its application as for water decontamination)

IT **7722-84-1, Hydrogen peroxide**, uses
RL: NUU (Other use, unclassified); USES (Uses)
(glass-supported anatase thin film photocatalyst and its application as for water decontamination)

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L48 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2001:157540 HCAPLUS
DOCUMENT NUMBER: 134:211698
TITLE: Agents for formation of inorganic coatings, manufacture of the agents, and formation of inorganic coatings
INVENTOR(S): Isozaki, Satoru
PATENT ASSIGNEE(S): Kansai Paint Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001058825	A2	20010306	JP 1999-232624	19990819
GB 2350841	A1	20001213	GB 2000-13789	20000606
GB 2350841	B2	20011219		
PRIORITY APPLN. INFO.:			JP 1999-161096 A	19990608

AB The agents comprise reaction products of **H2O2** and monomers and/or low mol. wt. condensates of Ti compds. having groups which form OH by hydrolysis. The agents are manufd. by addn. of the above stated monomers and/or low mol. wt. condensates to **H2O2**. A substrate is coated or impregnated with the above stated agent followed by drying or heating to obtain an inorg. coating. The coating may be **photoactive**, antibacterial, hydrophilic, antistaining, antifogging, gas decompg., deodorizing, energy converting, or noncoloring or may be used in water treatment.

IT **13463-67-7P, Titanium oxide**, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(mixts. of **H2O2** and titanium alkoxides for hydrolytic formation of functional **titania** coatings)
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT **7722-84-1, Hydrogen peroxide**, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(mixts. of **H2O2** and titanium alkoxides for hydrolytic formation of functional **titania** coatings)
RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)

HO—OH

IC ICM C01G023-053
CC 57-2 (Ceramics)
Section cross-reference(s): 42, 49, 67
ST **titania** coating formation agent hydrolysis; titanium alkoxide **hydrogen peroxide** coating soln; photocatalytic **titania** coating formation agent
IT **Coating materials**
(antistaining; mixts. of **H2O2** and titanium alkoxides for hydrolytic formation of functional **titania** coatings)
IT **Coating materials**
(bactericidal; mixts. of **H2O2** and titanium alkoxides for hydrolytic formation of functional **titania** coatings)
IT Antifogging agents
Deodorization
Energy converters
(coatings; mixts. of **H2O2** and titanium alkoxides for hydrolytic formation of functional **titania** coatings)
IT **Coating materials**
(hydrophilic coatings; mixts. of **H2O2** and titanium alkoxides for hydrolytic formation of functional **titania** coatings)
IT Wastewater treatment
(membranes; mixts. of **H2O2** and titanium alkoxides for hydrolytic formation of functional **titania** coatings)
IT Catalysts
(photochem., coatings; mixts. of **H2O2** and titanium alkoxides for hydrolytic formation of functional **titania** coatings)
IT Metal alkoxides
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(titanium; mixts. of **H2O2** and titanium alkoxides for hydrolytic formation of functional **titania** coatings)
IT **13463-67-7P**, **Titanium oxide**, preparation
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(mixts. of **H2O2** and titanium alkoxides for hydrolytic formation of functional **titania** coatings)
IT 546-68-9, Tetra(isopropoxy)titanium 5593-70-4, Tetrabutoxytitanium **7722-84-1**, **Hydrogen peroxide**, processes 328297-46-7
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(mixts. of **H2O2** and titanium alkoxides for hydrolytic formation of functional **titania** coatings)

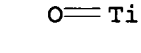
L48 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:87038 HCAPLUS
DOCUMENT NUMBER: 134:151924
TITLE: Photocatalytic degradation of phenol on **TiO2** coated inorganic membranes
AUTHOR(S): Modise, Sekomeng J.; Breet, Ernst L. J.; Keizer, Klaas
CORPORATE SOURCE: School of Chemistry and Biochemistry, Centre for Separation Technology, Potchefstroom University for CHE, Potchefstroom, 2520, S. Afr.
SOURCE: South African Journal of Chemistry (2000), 53(2), 125-131
CODEN: SAJCDG; ISSN: 0379-4350
PUBLISHER: South African Chemical Institute

DOCUMENT TYPE: Journal
LANGUAGE: English

AB The photocatalytic degrdn. of phenol was studied on **TiO2** coated metal (flat) and ceramic (tubular) membranes. The dependence of the obsd. rate const. kobs on [phenol], flow rate, pH, irradn. intensity, added [**H2O2**] and temp. was investigated with the purpose of elucidating the mechanism of the process. The role of other physico-chem. factors such as the membrane support/ **surface** and deliberately introduced O/N was also studied. The kinetic data are consistent with a mechanism comprising **photoactivation** and 2 degrdn. pathways. The **enhancement** of degrdn. by employing a catalyst coated membrane **surface** is clearly demonstrated by virtue of the acquired rate consts. and activation parameters.

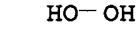
IT **13463-67-7**, **Titanium oxide**, uses
RL: CAT (Catalyst use); USES (Uses)
(photocatalytic degrdn. of phenol on **TiO2** coated inorg. membranes)

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IT **7722-84-1**, **Hydrogen peroxide**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photocatalytic degrdn. of phenol on **TiO2** coated inorg. membranes in relation to added **hydrogen peroxide**)

RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)



CC 60-2 (Waste Treatment and Disposal)
Section cross-reference(s): 67, **74**

ST phenol photocatalytic degrdn **titanium oxide** coated membrane kinetic; photolysis catalytic **titanium oxide** coated membrane phenol kinetic

IT Photolysis
Photolysis kinetics
(UV; photocatalytic degrdn. of phenol on **TiO2** coated inorg. membranes)

IT Sol-gel processing
(coating; photocatalytic degrdn. of phenol on **TiO2** coated inorg. membranes)

IT Light
(intensity; photocatalytic degrdn. of phenol on **TiO2** coated inorg. membranes in relation to)

IT Membranes, nonbiological
Photolysis catalysts
(photocatalytic degrdn. of phenol on **TiO2** coated inorg. membranes)

IT Flow
pH
(photocatalytic degrdn. of phenol on **TiO2** coated inorg. membranes in relation to)

IT **Coating process**
(sol-gel; photocatalytic degrdn. of phenol on **TiO2** coated inorg. membranes)
IT 1317-70-0, Anatase **13463-67-7**, **Titanium oxide**, uses
RL: CAT (Catalyst use); USES (Uses)
(photocatalytic degrdn. of phenol on **TiO2** coated inorg. membranes)
IT 108-95-2, Phenol, reactions
RL: RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent)
(photocatalytic degrdn. of phenol on **TiO2** coated inorg. membranes)
IT **7722-84-1**, **Hydrogen peroxide**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photocatalytic degrdn. of phenol on **TiO2** coated inorg. membranes in relation to added **hydrogen peroxide**)
IT 7782-44-7, Oxygen, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(photocatalytic degrdn. of phenol on **TiO2** coated inorg. membranes in relation to added oxygen)
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d l49 ibib abs hitstr hitind 1-31

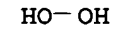
L49 ANSWER 1 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:507822 HCAPLUS
DOCUMENT NUMBER: 137:330955
TITLE: Silylation- and sulfonation of structured supported catalysts active in the decoloration of azo-dyes under visible light
AUTHOR(S): Yuranova, T.; Garamszegi, L.; Manson, Jan-Anders; Bensimon, M.; Kiwi, J.
CORPORATE SOURCE: Institute of Molecular Chemistry and Biology, Laboratory of Photonics and Interfaces, Swiss Federal Institute of Technology, Lausanne, 1015, Switz.
SOURCE: Journal of Photochemistry and Photobiology, A: Chemistry (**2002**), 150(1-3), 195-205
CODEN: JPPCEJ; ISSN: 1010-6030
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Structured silica woven fabrics have been derivatized with functional groups able to anchor by exchange of Fe3+-ions and **TiO2** showing a stable performance during the visible light induced decoloration of the Orange II azo-dye. The kinetics and efficiency of the decoloration mediated by the catalytic loaded silica fabrics with Fe3+-ions were seen to be much higher than found with homogeneous Fenton reagents (Fe3+/**H2O2**) with the equiv. Fe3+ content. The same was obsd. for derivatized membranes where **TiO2** has been anchored as the active catalyst **surface** species. In the case of the silica Fe3+-ions loaded fabrics, the decoloration was studied as a function of the amt. of **H2O2** oxidant added in soln., the intensity of the applied visible light and the concn. of the initial Orange II. In the case

of the silica-**TiO2** fabrics the decoloration kinetics was obsd. to be a function of the O2 present in soln. In the case of the derivatized Fe3+ and **TiO2** loaded silica fabrics, the decoloration process presented three common features: (a) the decoloration process was obsd. only in the presence of light pointing to a photoinduced process in both cases, (b) the decoloration was also obsd. to be truly catalytic following repetitive cycles for Orange II, and finally (c) the decoloration processes were limited by the mass transfer kinetics taking place at the **surface** of both derivatized fabric catalyst and proceeded with about the same kinetics in both cases. The numerical values for the diffusion distance of the radicals species OH• and HO2• as well as the decrease in the concn. of radicals away from the silica fabric during the photodegrdn. of Orange II is estd. by the Smoluchowski diffusion equation.

IT **7722-84-1, Hydrogen peroxide**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(decoloration of azo-dyes under visible light photocatalyzed by Fe3+ or **TiO2** anchored on derivatized silica glass fiber fabric support)

RN 7722-84-1 HCAPLUS

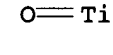
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)



IT **13463-67-7DP, Titania, surface** reaction
product with derivatized silica woven fabrics
RL: CAT (Catalyst use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(photocatalytic activity of Fe3+ or **TiO2** anchored on derivatized silica glass fiber fabric support)

RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST silylation sulfonation silica fabric support Fenton photocatalyst visible light; iron ion **titania** anchored derivatized silica woven fabric support; photooxidn visible light iron ion **titania** derivatized silica support; polystyrene derivatized silica woven fabric Fenton photocatalyst

IT Hydroxyl group
Silylation
Sulfonation
(derivatization of silica woven fabric in prepn. of Fe3+ or **TiO2** anchored photocatalysts for visible **light** Fenton **reaction**)

IT Polymerization
(grafting polymn. of styrene on mercaptopropyl functionalized silica woven fabric in prepn. of Fe3+- or **TiO2** anchored Fenton photocatalysts)

IT Polymer-supported reagents
(photocatalysts; photocatalytic activity of Fe3+ or **TiO2** anchored on derivatized silica glass fiber fabric support)

IT Fenton reaction kinetics
(photochem.; decoloration of azo-dyes under visible light photocatalyzed by Fe3+ or **TiO2** anchored on derivatized silica glass fiber fabric support)
IT Fenton reaction catalysts
(photochem.; photocatalytic activity of Fe3+ or **TiO2** anchored on derivatized silica glass fiber fabric support)
IT Oxidation catalysts
(photooxidn.; decoloration of azo-dyes under visible light photocatalyzed by Fe3+ or **TiO2** anchored on derivatized silica glass fiber fabric support)
IT Glass fiber fabrics
RL: CAT (Catalyst use); CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(silica, derivatized; photocatalytic activity of Fe3+ or **TiO2** anchored on derivatized silica glass fiber fabric support)
IT Glass fibers, properties
RL: CAT (Catalyst use); CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(silica-based, woven, derivatized; photocatalytic activity of Fe3+ or **TiO2** anchored on derivatized silica glass fiber fabric support)
IT 3352-57-6, Hydroxyl, reactions 14691-59-9, Hydroperoxide anion
RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); RCT (Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)
(decoloration of azo-dyes under visible light photocatalyzed by Fe3+ or **TiO2** anchored on derivatized silica glass fiber fabric support)
IT 633-96-5, Orange II **7722-84-1, Hydrogen peroxide**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(decoloration of azo-dyes under visible light photocatalyzed by Fe3+ or **TiO2** anchored on derivatized silica glass fiber fabric support)
IT 78-67-1
RL: CAT (Catalyst use); USES (Uses)
(grafting polymn. of styrene on mercaptopropyl functionalized silica woven fabric in prepn. of Fe3+- or **TiO2** anchored Fenton photocatalysts)
IT 100-42-5, Styrene, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(grafting polymn. of styrene on mercaptopropyl functionalized silica woven fabric in prepn. of Fe3+- or **TiO2** anchored Fenton photocatalysts)
IT 9003-53-6DP, Polystyrene, **surface** reaction product with derivatized silica glass fiber **13463-67-7DP, Titania**, **surface** reaction product with derivatized silica woven fabrics 20074-52-6DP, Iron(3+), **surface** reaction product with derivatized silica woven fabrics, properties
RL: CAT (Catalyst use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(photocatalytic activity of Fe3+ or **TiO2** anchored on derivatized silica glass fiber fabric support)
IT 770-10-5, Benzyltrichlorosilane 14814-09-6
RL: RCT (Reactant); RACT (Reactant or reagent)

(silylation of silica woven fabric with benzyltrichlorosilane in prepn. of Fe3+- or **TiO2** anchored Fenton photocatalysts)

IT 121-44-8, Triethylamine, uses
RL: NUU (Other use, unclassified); USES (Uses)
(silylation of silica woven fabric with benzyltrichlorosilane in presence of triethylamine in prepn. of Fe3+- or **TiO2** anchored Fenton photocatalysts)

IT 1314-56-3, Phosphorus oxide (P2O5), reactions 7664-93-9, Sulfuric acid, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(sulfonation of derivatized silica woven fabric using H2SO4/P2O5 mixt. in prepn. of Fe3+- or **TiO2** anchored Fenton photocatalysts)

IT 7631-86-9, Silica, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(woven fabric; derivatization of silica woven fabric in prepn. of Fe3+ or **TiO2** anchored photocatalysts for visible **light** Fenton **reaction**)

IT 7631-86-9DP, Silica, **surface** derivatized
RL: CAT (Catalyst use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(woven fabric; photocatalytic activity of Fe3+ or **TiO2** anchored on derivatized silica glass fiber fabric support)

REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 2 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:452741 HCAPLUS
DOCUMENT NUMBER: 137:239555
TITLE: Photocatalytic degradation of a cationic azo dye by **TiO2**/bentonite nanocomposite
AUTHOR(S): Sun, Zhenshi; Chen, Yingxu; Ke, Qiang; Yang, Ye; Yuan, Jun
CORPORATE SOURCE: Department of Environmental Engineering, Zhejiang University, Hangzhou, 310029, Peop. Rep. China
SOURCE: Journal of Photochemistry and Photobiology, A: Chemistry (**2002**), 149(1-3), 169-174
CODEN: JPPCEJ; ISSN: 1010-6030
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

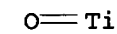
AB **Titanium dioxide**/bentonite clay nanocomposite prepd. by acid-catalyzed sol-gel method was used as photocatalyst in the reaction of cationic azo dye decompn. in water. The incorporation of **TiO2** was confirmed by powder x-ray diffraction (XRD) and x-ray photoelectron spectrometer (XPS). The photocatalytic activity of those nanocomposite photocatalysts was much higher than that of the pure **titanium dioxides.** The nanocomposite created a kinetic synergy effect in Cationic Red GTL (GTL) disappearance with an increase of the rate const. by a factor of 2.57 for neat **TiO2** (P-25). The **photoactivities** were greatly dependent on the soln. pH, and it was more effective for GTL to be degraded under alk. condition. That was likely to contribute for the acid-base equil. on the **surface** of the nanocomposite. Results also indicated that the proper addn. of **hydrogen peroxide** could improve the decolorization rate, but the excess **hydrogen peroxide** could quench the

formation of •OH.

IT **13463-67-7P, Titanium dioxide,** properties
RL: CAT (Catalyst use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)
(characterization of sol-gel derived **TiO2**/bentonite nanoscale composite photocatalyst and its application for degrdn. of azo dye in suspension)

RN 13463-67-7 HCAPLUS

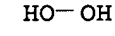
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IT **7722-84-1, Hydrogen peroxide,** processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(photocatalytic degrdn. of cationic azo dye Cationic Red GTL by **TiO2**/bentonite nanocomposite in presence and absence of **hydrogen peroxide**)

RN 7722-84-1 HCAPLUS

CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)



CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST photodegrdn cationic azo dye **titania** bentonite nanocomposite photocatalyst

IT UV and visible spectra
(absorption; characterization of sol-gel derived **titania**/bentonite nanoscale composite photocatalyst and its application for degrdn. of azo dye in suspension)

IT Photolysis kinetics
(efficiency of photocatalytic degrdn. of cationic azo dye Cationic Red GTL by **TiO2**/bentonite nanocomposite)

IT Photolysis catalysts
(photocatalytic degrdn. of cationic azo dye Cationic Red GTL by **TiO2**/bentonite nanocomposite)

IT X-ray diffraction
X-ray photoelectron spectra
(prepn. and characterization of **titania**/bentonite nanoscale composite photocatalyst and its application for degrdn. of azo dye in suspension)

IT Bentonite, properties
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
(prepn. and characterization of **titania**/bentonite nanoscale composite photocatalyst and its application for degrdn. of azo dyes in suspension)

IT 14254-17-2, Cationic Red GTL
RL: RCT (Reactant); RACT (Reactant or reagent)
(Cationic Red GTL; photocatalytic degrdn. of cationic azo dye by **TiO2**/bentonite nanocomposite)

IT **13463-67-7P, Titanium dioxide,** properties
RL: CAT (Catalyst use); PNU (Preparation, unclassified); PRP (Properties); PREP (Preparation); USES (Uses)

(characterization of sol-gel derived **TiO2**/bentonite nanoscale composite photocatalyst and its application for degrdn. of azo dye in suspension)

IT **7722-84-1**, **Hydrogen peroxide**, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process)
(photocatalytic degrdn. of cationic azo dye Cationic Red GTL by **TiO2**/bentonite nanocomposite in presence and absence of **hydrogen peroxide**)

IT 3352-57-6, Hydroxyl, reactions
RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)
(photocatalytic degrdn. of cationic azo dye Cationic Red GTL by **TiO2**/bentonite nanocomposite in presence and absence of **hydrogen peroxide**)

IT 5593-70-4, Tetrabutyl titanate 7697-37-2, Nitric acid, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. of **titania**/bentonite nanoscale composite photocatalyst using acid catalyzed sol-gel process)

REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 3 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:449535 HCAPLUS
DOCUMENT NUMBER: 137:34822
TITLE: Advanced oxidation of dangerous chemical and biological sources
INVENTOR(S): Tribelsky, Zamir; Ende, Michael
PATENT ASSIGNEE(S): Israel
SOURCE: PCT Int. Appl., 90 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002045756	A2	20020613	WO 2001-IL1137	20011207
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WO 2002045756	A3	20030103		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
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AU 2002022465	A5	20020618	AU 2002-22465	

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BR 2001016514 A 20031223 BR 2001-16514
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US 2004120844 A1 20040624 US 2004-433776
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PRIORITY APPLN. INFO.: IL 2000-140180 A
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WO 2001-IL1137 W
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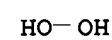
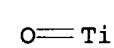
AB Advanced oxidn. technologies (AOT) using laser triggered and driven AOT platform are disclosed, including a method for the advanced oxidn. of dangerous chem. and biol. sources suspected in particular regions, a variety of uses of said method, and the environments where it can be implemented. The method has two basic steps that are; (1) spraying the regions to be treated with a cloud of gas, vapors, microdroplets, droplets, or bubbles formed from at least one liq. soln. contg. at least one type of photocatalytic oxidizing substance; (2) directing across said cloud at least one high intensity beam of light having wavelength of between 220 and 390 nm for triggering said cloud thereby causing a catalyzed activation that releases free radicals of said oxidizing substance in order to react with said chem. or biol. sources. Various types and embodiments of systems and devices using the method of the present invention are also disclosed, including a bubble generator adapted for implementation of the method in various sites where treatment procedures according to the method are required. The present invention may be used for non-invasive disinfection, purifn., and inactivation or equalization of (DNA, & RNA) replication sequences

of noxious species in myriad of biomedical, and biotechnol. applications involving end users, producers, and researchers in assocd. fields, including: sterilization of tools and medical instruments; use in particular medical fields or in dentistry; use in cleaning vehicles, ships, planes or building sites.

IT **7722-84-1, Hydrogen peroxide**, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(oxidant; advanced oxidn. of dangerous chem. and biol. sources for **surface** cleaning and disinfection)
RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)



IT **13463-67-7, Titanium oxide**, uses
RL: CAT (Catalyst use); USES (Uses)
(photocatalyst; advanced oxidn. of dangerous chem. and biol. sources for **surface** cleaning and disinfection)
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IC ICM A61L002-00
ICS A61L002-10; A61L002-16; A61L002-28
CC 46-6 (Surface Active Agents and Detergents)
Section cross-reference(s): 63, **74**
ST advanced oxidn photocatalytic sterilization disinfection **surface** cleaning; laser UV irradn catalytic photooxidn sterilization disinfection **surface** cleaning
IT UV radiation
(UVA/UVB/UVC; advanced oxidn. of dangerous chem. and biol. sources for **surface** cleaning and disinfection)
IT Cleaning
Sterilization and Disinfection
(advanced oxidn. of dangerous chem. and biol. sources for **surface** cleaning and disinfection)
IT Oxidation, photochemical
(catalytic; advanced oxidn. of dangerous chem. and biol. sources for **surface** cleaning and disinfection)
IT Fluorescent substances
(component of photocatalytic bubbles or droplets that **reacts** with **light** beam; advanced oxidn. of dangerous chem. and biol. sources for **surface** cleaning and disinfection)
IT Lasers
(providing UVA/UVB/UVC; advanced oxidn. of dangerous chem. and biol. sources for **surface** cleaning and disinfection)
IT Polyesters, uses
Polyolefins
RL: NUU (Other use, unclassified); USES (Uses)
(used to isolate items to be disinfected; advanced oxidn. of dangerous chem. and biol. sources for **surface** cleaning and disinfection)
IT 50926-11-9, Indium tinoxide

RL: CAT (Catalyst use); USES (Uses)
(electrolysis catalyst; advanced oxidn. of dangerous chem. and biol. sources for **surface** cleaning and disinfection)

IT **7722-84-1**, **Hydrogen peroxide**, processes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(oxidant; advanced oxidn. of dangerous chem. and biol. sources for **surface** cleaning and disinfection)

IT **13463-67-7**, **Titanium oxide**, uses
RL: CAT (Catalyst use); USES (Uses)
(photocatalyst; advanced oxidn. of dangerous chem. and biol. sources for **surface** cleaning and disinfection)

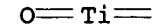
IT 24968-12-5, Pbt 25038-59-9, Pet, uses
RL: NUU (Other use, unclassified); USES (Uses)
(used to isolate items to be disinfected; advanced oxidn. of dangerous chem. and biol. sources for **surface** cleaning and disinfection)

L49 ANSWER 4 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:819193 HCAPLUS
DOCUMENT NUMBER: 136:175335
TITLE: **TiO2**-Photocatalyzed Epoxidation of 1-Decene by **H2O2** under Visible Light
AUTHOR(S): Ohno, Teruhisa; Masaki, Yuji; Hirayama, Seiko; Matsumura, Michio
CORPORATE SOURCE: Research Center for Solar Energy Chemistry, Osaka University, Toyonada, Osaka, 560-8531, Japan
SOURCE: Journal of Catalysis (**2001**), 204(1), 163-168
CODEN: JCTLA5; ISSN: 0021-9517
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English

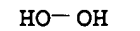
AB 1-Decene was converted to 1,2-epoxydecane on UV-irradiated **TiO2** powder using mol. oxygen as the oxygen source. Other main products were nonanal and 2-decanone. For anatase-form **TiO2** powders, the reaction rate was hardly affected by addn. of **hydrogen peroxide** to the soln. In contrast, for rutile-form **TiO2** powders, the rate of epoxide generation was significantly increased by addn. of **hydrogen peroxide.** In this case, the reaction occurred under visible light as well as UV light. The selectivity of the prodn. of 1,2-epoxydecane was higher under visible light than under UV light. The conversion efficiency of an incident photon to 1,2-epoxydecane was about 2% when irradiated with visible light in the range 440-480 nm. UV-visible diffuse reflection spectroscopy, Fourier transform IR spectroscopy, and XPS suggested the generation of a Ti-η2-peroxide on rutile **TiO2 surface** after treatment with **hydrogen peroxide.** The initial step of the **reaction** under visible **light** was attributed to a photochem. reaction of this peroxide with 1-decene. (c) 2001 Academic Press.

IT **13463-67-7**, **Titania**, properties
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
(epoxidn. of decene photocatalyzed by **titania** powders of rutile or anatase structure in presence and absence of **hydrogen peroxide**)

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IT **7722-84-1, Hydrogen peroxide**, properties
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(epoxidn. of decene photocatalyzed by **titania** powders of rutile or anatase structure in presence and absence of **hydrogen peroxide**)
RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)



CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST rutile **titania** photocatalyst decene epoxidn **hydrogen peroxide** visible light; anatase **titania** photocatalyst decene epoxidn **hydrogen peroxide** effect
IT Reflection spectra
(UV-visible diffuse; characterization of **titania** photocatalysts of rutile or anatase structure after treatment with **hydrogen peroxide** in relation to epoxidn. of decene)
IT IR spectra
Surface reaction
X-ray photoelectron spectra
(characterization of **titania** photocatalysts of rutile or anatase structure after treatment with **hydrogen peroxide** in relation to epoxidn. of decene)
IT Solar energy
(conversion; photocatalyzed epoxidn. of decene by **hydrogen peroxide** in presence of rutile **titania** under visible light irradn. in relation to)
IT UV and visible spectra
(diffuse reflection; characterization of **titania** photocatalysts of rutile or anatase structure after treatment with **hydrogen peroxide** in relation to epoxidn. of decene)
IT Epoxidation kinetics
(epoxidn. of decene photocatalyzed by **titania** powders of rutile or anatase structure in presence and absence of **hydrogen peroxide**)
IT Epoxidation
(photocatalytic; epoxidn. of decene photocatalyzed by **titania** powders of rutile or anatase structure in presence and absence of **hydrogen peroxide**)
IT Epoxidation catalysts
(photochem.; characterization of **titania** powder photocatalysts of rutile or anatase structure after treatment with **hydrogen peroxide** in relation to epoxidn. of decene)
IT **13463-67-7, Titania**, properties
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
(epoxidn. of decene photocatalyzed by **titania** powders

of rutile or anatase structure in presence and absence of **hydrogen peroxide**)

IT **7722-84-1, Hydrogen peroxide**, properties
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process)
(epoxidn. of decene photocatalyzed by **titania** powders of rutile or anatase structure in presence and absence of **hydrogen peroxide**)

IT 872-05-9, 1-Decene
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(epoxidn. of decene photocatalyzed by **titania** powders of rutile or anatase structure in presence and absence of **hydrogen peroxide**)

IT 225919-02-8, JRC-TIO-3 225919-04-0, JRC-TIO-5
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
(photocatalyzed epoxidn. of decene by **hydrogen peroxide** in presence of rutile **titania** under visible light irradn.)

IT 124-19-6, Nonanal 693-54-9, 2-Decanone 2404-44-6, 1,2-Epoxydecane
RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); FORM (Formation, nonpreparative); PROC (Process)
(photoproduct; epoxidn. of decene photocatalyzed by **titania** powders of rutile or anatase structure in presence and absence of **hydrogen peroxide**)

IT 1317-70-0, Anatase
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
(synthetic; epoxidn. of decene photocatalyzed by **titania** powders of rutile or anatase structure in presence and absence of **hydrogen peroxide**)

IT 1317-80-2, Rutile
RL: CAT (Catalyst use); PRP (Properties); USES (Uses)
(synthetic; photocatalyzed epoxidn. of decene by **hydrogen peroxide** in presence of rutile **titania** under visible light irradn.)

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

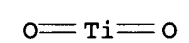
L49 ANSWER 5 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:703253 HCAPLUS
DOCUMENT NUMBER: 136:77111
TITLE: Photooxidation of the phenylazonaphthol AO20 on **TiO2**: kinetic and mechanistic investigations
AUTHOR(S): Galindo, C.; Jacques, P.; Kalt, A.
CORPORATE SOURCE: Laboratoire de Chimie Textile, Ecole Nationale Superieure de Chimie de Mulhouse, Mulhouse, 68093, Fr.
SOURCE: Chemosphere (**2001**), 45(6-7), 997-1005
CODEN: CMSHAF; ISSN: 0045-6535
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The results of the photocatalytic and **photosensitized** degrdns. of the monoazo dye AO20 in aq. soln. using suspended **titanium dioxide** are presented. Kinetic and

mechanistic details have been elucidated using UV/Vis, FTIR and TCO techniques. It was proven that adsorption of dye mols. onto the support material is essential for the processes to be effective. Moreover, even if their mechanisms differ during the early stages, photocatalysis and **photosensitization** lead to very similar ultimate breakdown products. Indeed, the original dye anchored to the oxide **surface** systematically undergoes fast decompn. until it is transformed into CO2 or aliph. acids (formic, acetic, oxalic acids), which react rather slowly with hydroxyl radicals or trapped holes.

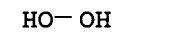
IT **13463-67-7**, **Titania**, processes
RL: CAT (Catalyst use); CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(photocatalytic and **photosensitized** degrdn. of monoazo dye AO20 in aq. soln. using suspended **titanium dioxide**)

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IT **7722-84-1**, **Hydrogen peroxide**, reactions
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(photocatalytic and **photosensitized** degrdn. of monoazo dye AO20 in aq. soln. using suspended **titanium dioxide**)

RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)



CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST photooxidn phenylazonaphthol dye AO20 **titania** photocatalyst particle; **photosensitized** degrdn phenylazonaphthol dye AO20 **titania** photocatalyst particle

IT Oxidation, photochemical
(catalytic; photocatalytic and **photosensitized** degrdn. of monoazo dye AO20 in aq. soln. using suspended **titanium dioxide**)

IT Adsorption
IR spectra
Photolysis
(photocatalytic and **photosensitized** degrdn. of monoazo dye AO20 in aq. soln. using suspended **titanium dioxide**)

IT 547-57-9 547-58-0 84875-74-1
RL: PRP (Properties); RCT (Reactant); RACT (Reactant or reagent)
(comparison compd.; photocatalytic and **photosensitized** degrdn. of monoazo dye AO20 in aq. soln. using suspended **titanium dioxide**)

IT **13463-67-7**, **Titania**, processes
RL: CAT (Catalyst use); CPS (Chemical process); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(photocatalytic and **photosensitized** degrdn. of monoazo

dye AO20 in aq. soln. using suspended **titanium dioxide**)

IT 124-38-9, Carbon dioxide, processes
RL: CPS (Chemical process); FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process)
(photocatalytic and **photosensitized** degrdn. of monoazo dye AO20 in aq. soln. using suspended **titanium dioxide**)

IT 118667-13-3
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(photocatalytic and **photosensitized** degrdn. of monoazo dye AO20 in aq. soln. using suspended **titanium dioxide**)

IT **7722-84-1**, **Hydrogen peroxide**, reactions
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(photocatalytic and **photosensitized** degrdn. of monoazo dye AO20 in aq. soln. using suspended **titanium dioxide**)

IT 64-18-6, Formic acid, reactions 64-19-7, Acetic acid, reactions 3352-57-6, Hydroxyl, reactions
RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)
(photocatalytic and **photosensitized** degrdn. of monoazo dye AO20 in aq. soln. using suspended **titanium dioxide**)

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

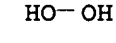
L49 ANSWER 6 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:681752 HCAPLUS
DOCUMENT NUMBER: 136:207598
TITLE: Photocatalytic activity of anodized titanium plates prepared in a bath containing SnO2 and **TiO2** particles through 2-step anodization
AUTHOR(S): Kuraki, Jun; Iwasaki, Mitsunobu; Tada, Hiroaki; Ito, Seishiro
CORPORATE SOURCE: Grad. Sch. Eng., Kinki Univ., Higashiosaka, Osaka, 577-8502, Japan
SOURCE: Shikizai Kyokaishi (**2001**), 74(7), 332-338
CODEN: SKYOAO; ISSN: 0010-180X
PUBLISHER: Shikizai Kyokai
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Thick anodized titanium plates with high photocatalytic activity were prepd. by 2-step anodization method: first anodization in the bath (H3PO4-H2SO4-**H2O2**) contg. SnO2 and/or **TiO2** particles; reanodization in the mixt. of NH4HF2 and **H2O2**. The apparent rate const. (k), which was evaluated by the photooxidn. decompn. of CH3CHO gas, was drastically improved by the addn. of SnO2 and/or **TiO2** particles. The high k value was mainly induced by the three things: (1) **TiO2** particles loaded on the film **surface**; (2) crystal growth of anatase because of a significant change in electrolytic behavior; (3) acceleration of

charge career sepn. owing to the transfer of a part of photogenerated electrons from **TiO2** to SnO2 particles in the films.

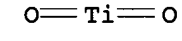
IT **7722-84-1, Hydrogen peroxide**, uses
RL: NUU (Other use, unclassified); USES (Uses)
(anodization bath contg.; photocatalytic activity of anodized titanium plates prepd. in a bath contg. SnO2 and **TiO2** particles through 2-step anodization)

RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)



IT **13463-67-7, Titania**, uses
RL: NUU (Other use, unclassified); USES (Uses)
(photocatalytic activity of anodized titanium plates prepd. in a bath contg. SnO2 and **TiO2** particles through 2-step anodization)

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



CC **74-13** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 42

IT Oxidation, photochemical
(of acetaldehyde, photocatalyst for; photocatalytic activity of anodized titanium plates prepd. in a bath contg. SnO2 and **TiO2** particles through 2-step anodization)

IT Anodization
Color
Electric current-potential relationship
Photolysis catalysts
(photocatalytic **activity** of anodized titanium plates prepd. in a bath contg. SnO2 and **TiO2** particles through 2-step anodization)

IT Oxidation catalysts
(photooxidn., for acetaldehyde; photocatalytic activity of anodized titanium plates prepd. in a bath contg. SnO2 and **TiO2** particles through 2-step anodization)

IT 7664-38-2, Phosphoric acid, uses 7664-93-9, Sulfuric acid, uses **7722-84-1, Hydrogen peroxide**, uses
RL: NUU (Other use, unclassified); USES (Uses)
(anodization bath contg.; photocatalytic activity of anodized titanium plates prepd. in a bath contg. SnO2 and **TiO2** particles through 2-step anodization)

IT 7440-32-6, Titanium, processes
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PYP (Physical process); PROC (Process); USES (Uses)
(photocatalytic activity of anodized titanium plates prepd. in a bath contg. SnO2 and **TiO2** particles through 2-step anodization)

IT **13463-67-7, Titania**, uses 18282-10-5, Tin oxide (SnO2)
RL: NUU (Other use, unclassified); USES (Uses)

(photocatalytic activity of anodized titanium plates prepd. in a bath contg. SnO2 and **TiO2** particles through 2-step anodization)

IT 75-07-0, Acetaldehyde, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photooxidn. decompn. of, photocatalyst for; photocatalytic activity of anodized titanium plates prepd. in a bath contg. SnO2 and **TiO2** particles through 2-step anodization)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 7 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:426422 HCAPLUS
DOCUMENT NUMBER: 135:233722
TITLE: Overall water splitting by sono-photocatalytic reaction: the role of powdered photocatalyst and an attempt to decompose water using a visible-**light sensitive** photocatalyst
AUTHOR(S): Harada, H.; Hosoki, C.; Kudo, A.
CORPORATE SOURCE: Faculty of Physical Sciences and Engineering, Meisei University and Advanced Materials Research and Development Center,Meisei University, Hino-shi, Tokyo, 191-8506, Japan
SOURCE: Journal of Photochemistry and Photobiology, A: Chemistry (**2001**), 141(2-3), 219-224
CODEN: JPPCEJ; ISSN: 1010-6030
PUBLISHER: Elsevier Science S.A.
DOCUMENT TYPE: Journal
LANGUAGE: English

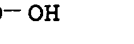
AB The role of a photocatalyst in the sono-photocatalytic reaction of water was investigated using **TiO2** photocatalysts. Based on this investigation, sono-photocatalytic water splitting using visible light was attempted. BiVO4 is a visible **light-sensitive** material and this material is one of the candidates for O2 evolution photocatalyst. For example, O2 is evolved from **H2O2** soln. by photocatalytic **reaction** under visible **light** irradn. On the other hand, H2 is produced together with **H2O2** from water by irradn. of ultrasound. Thus, it is expected to obtain H2 and O2 from water when these two reaction systems are combined. Simultaneous irradn. of visible light and ultrasound was tried to perform. As the result, liq. water was decompd. to H2 and O2 continuously and stoichiometrically.

IT **13463-67-7**, **Titania**, properties
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(P-25; role of photocatalyst in sono-photocatalytic reaction of water using **TiO2**)

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

IT **7722-84-1**, **Hydrogen peroxide**, processes
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process)
(photocatalytic decompn. of water using **TiO2** and

visible-light decompn. of water using ultrasound and BiVO4 catalyst)
RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)



CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST photocatalytic sonophotocatalytic water decompn **titania** bismuth vanadate; photolysis water **titania** photocatalyst; visible light sonophotocatalytic water photodecompn bismuth vanadate photocatalyst; ultrasound visible light water photolysis bismuth vanadate photocatalyst
IT **Surface** area
(of catalysts; photocatalytic decompn. of water using **TiO2** and visible-light decompn. of water using ultrasound and BiVO4 catalyst)
IT Photolysis
Photolysis catalysts
(photocatalytic decompn. of water using **TiO2** and visible-light decompn. of water using ultrasound and BiVO4 catalyst)
IT Sound and Ultrasound
(sono-photocatalytic decompn. of water using visible-**light sensitive** photocatalyst)
IT **13463-67-7**, **Titania**, properties
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(P-25; role of photocatalyst in sono-photocatalytic reaction of water using **TiO2**)
IT 1333-74-0, Hydrogen, processes **7722-84-1**, **Hydrogen peroxide**, processes 7782-44-7, Oxygen, processes
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process)
(photocatalytic decompn. of water using **TiO2** and visible-light decompn. of water using ultrasound and BiVO4 catalyst)
IT 7732-18-5, Water, reactions
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(photocatalytic decompn. of water using **TiO2** and visible-light decompn. of water using ultrasound and BiVO4 catalyst)
IT 14059-33-7, Bismuth vanadate(BiVO4)
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(sono-photocatalytic decompn. of water using visible-**light sensitive** photocatalyst)
IT 1317-80-2, Rutile
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(synthetic; photocatalytic decompn. of water using **TiO2** and visible-light decompn. of water using ultrasound and BiVO4 catalyst)
IT 1317-70-0, Anatase
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); FORM (Formation,

nonpreparative); PROC (Process)
(synthetic; photocatalytic decompn. of water using **TiO2** and visible-light decompn. of water using ultrasound and BiVO4 catalyst)
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 8 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:376576 HCAPLUS
DOCUMENT NUMBER: 131:151545
TITLE: Photocatalysis with Fe/**TiO2** semiconductors and **TiO2** sensitized by phthalocyanines
AUTHOR(S): Roman, Enrique A. San; Navio, Jose A.; Litter, Marta I.
CORPORATE SOURCE: INQUIMAE, FCEN-UBA, Ciudad Universitaria, Buenos Aires, 1428, Argent.
SOURCE: Journal of Advanced Oxidation Technologies (**1998**), 3(3), 261-269
CODEN: JAOTFT; ISSN: 1203-8407
PUBLISHER: Science & Technology Integration
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Two alternative ways to improve the photocatalytic properties of **TiO2** are tested: (a) doping with iron ions, and (b) attaching a phthalocyanine to the **surface.** Doped Fe(III)-**TiO2** samples have been prepd. by different techniques as by impregnation of Degussa P-25 with iron nitrate and iron acetylacetonate, and by a sol-gel method from TiCl4 and Fe(acac)3. Introduction of Fe(III) in **TiO2** is found to decrease generally the photocatalytic activity in oxidative and reductive photocatalytic reactions as compared with Degussa P-25. Changes on **surface** and bulk properties of the doped samples compared with those of P-25 explain the decrease of the activity. On the other hand, adsorption of an aluminum tetracarboxylated phthalocyanine onto the **TiO2 surface**, renders a stable and reusable material to perform selective photocatalytic oxidns. under visible irradn. Injection of electrons into the semiconductor conduction band from the excited dye, leaving a radical cation, initiates the oxidn. reactions. A preliminary kinetic study has been performed and the influence of scavengers, analyzed.
IT **13463-67-7, Titania**, properties
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(photocatalytic activity of **TiO2** doped with Fe(III) or sensitized with phthalocyanine adsorbate)
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT **7722-84-1, Hydrogen peroxide**, properties
RL: PRP (Properties)
(photocatalytic activity of **TiO2** sensitized with tetracarboxylated aluminum phthalocyanine for photooxidns. of phenol under visible irradn. in presence of)

RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)

HO—OH

CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 60
ST iron doping phthalocyanine sensitization **titania** photocatalyst; photocatalysis iron doped **titania**; photocatalytic property **titanium dioxide** phthalocyanine sensitizer
IT Photoinduced electron transfer
(electron injection to conduction band of photocatalyst as mechanism of sensitization of **TiO2** by adsorbed aluminum phthalocyanine)
IT Carboxylic acids, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photocatalytic activity of Fe(III) doped **titania** in oxidative and reductive photocatalytic reactions)
IT **Photolysis** catalysts
(photocatalytic **activity** of **TiO2** doped with Fe(III) or sensitized with phthalocyanine adsorbate)
IT Redox reaction catalysts
(photochem.; photocatalytic activity of Fe(III) doped **titania** in oxidative and reductive photocatalytic reactions)
IT Catalysts
(photochem.; photocatalytic activity of **TiO2** doped with Fe(III) or sensitized with phthalocyanine adsorbate)
IT Oxidation catalysts
(photooxidn.; photocatalytic activity of **TiO2** doped with Fe(III) or sensitized with phthalocyanine adsorbate)
IT Redox potential
(redox potential of aluminum phthalocyanine sensitizer attached to **titania** photocatalyst)
IT 7439-89-6, Iron, uses
RL: MOA (Modifier or additive use); USES (Uses)
(photocatalysis with Fe/**TiO2** semiconductors)
IT 60-00-4, EDTA, reactions 141-82-2, Malonic acid, reactions 144-62-7, Ethanedioic acid, reactions 7782-44-7, Oxygen, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photocatalytic activity of Fe(III) doped **titania** in oxidative and reductive photocatalytic reactions)
IT 149579-21-5, Hydroxyaluminium tricarboxymonoamidephthalocyanine
RL: CAT (Catalyst use); USES (Uses)
(photocatalytic activity of **TiO2** doped with Fe(III) or sensitized with phthalocyanine adsorbate)
IT **13463-67-7**, **Titania**, properties
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(photocatalytic activity of **TiO2** doped with Fe(III) or sensitized with phthalocyanine adsorbate)
IT 75-65-0, properties **7722-84-1**, **Hydrogen peroxide**, properties 15092-81-6, Peroxydisulfate ((SO3)2O22-)
RL: PRP (Properties)
(photocatalytic activity of **TiO2** sensitized with

tetracarboxylated aluminum phthalocyanine for photooxidns. of phenol under visible irradn. in presence of)

IT 69-72-7, reactions 106-48-9, 4-Chlorophenol 106-51-4, 2,5-Cyclohexadiene-1,4-dione, reactions 108-95-2, Phenol, reactions 108-98-5, Thiophenol, reactions 123-31-9, 1,4-Benzenediol, reactions 7681-11-0, Potassium iodide, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photocatalytic activity of **TiO2** sensitized with tetracarboxylated aluminum phthalocyanine for photooxidns. under visible irradn.)

IT 14797-55-8, Nitrate, formation (nonpreparative)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(photocatalytic properties of iron(III)-doped **TiO2** for nitrite oxidn.)

IT 14797-65-0, Nitrite, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photocatalytic properties of iron(III)-doped **TiO2** for nitrite oxidn.)

IT 7550-45-0, Titanium tetrachloride, processes 10421-48-4, Iron trinitrate 14024-18-1, Iron acetylacetonate
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(prepn. of iron(III) doped **titania** photocatalyst)

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 9 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:251931 HCAPLUS
DOCUMENT NUMBER: 131:51865
TITLE: Sensitized photocatalytic oxidation of desmetryne
AUTHOR(S): Lobedank, J.; Bendig, J.
CORPORATE SOURCE: Humboldt-Universitat zu Berlin, Institut fur Chemie, Berlin, 10115, Germany
SOURCE: Journal of Information Recording (**1998**), 24(1-2), 41-45
CODEN: JIREFL; ISSN: 1025-6008
PUBLISHER: Gordon & Breach Science Publishers
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The photocatalytic oxidn. (PCO) using **titanium dioxide** as semiconductor proves to be an effective method of water purifn. The dye sensitization (SPCO) extends the region of spectral response. Ruthenium complex dyes are excellent sensitizers. The authors investigate the efficiency of the PCO and SPCO processes in dependence on the pH value of the polluted soln., resp., and at SPCO on the **surface** concn. of the sensitizer. The object of degrdn. is the herbicide desmetryne. The PCO process is dominated by the conduction band reaction.

IT **13463-67-7**, **Titania**, processes
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(photooxidn. of desmetryne using **titania** photocatalyst and ruthenium complex dye **photosensitizers**)

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT **7722-84-1, Hydrogen peroxide**, reactions
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(photooxidn. of desmetryne using **titania** photocatalyst and ruthenium complex dye **photosensitizers** in presence of **hydrogen peroxide**)
RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)

CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 61
ST desmetryne sensitized photocatalytic oxidn **titania**; photooxidn desmetryne water pollutant **titania** photocatalyst ruthenium complex **photosensitizer**
IT Oxidation, photochemical
(catalytic; photooxidn. of desmetryne using **titania** photocatalyst and ruthenium complex dye **photosensitizers** in relation to)
IT Water purification
(photocatalytic; photooxidn. of desmetryne using **titania** photocatalyst and ruthenium complex dye **photosensitizers** in relation to)
IT Wastewater treatment
(photolytic; photooxidn. of desmetryne using **titania** photocatalyst and ruthenium complex dye **photosensitizers** in relation to)
IT pH
(photooxidn. of desmetryne using **titania** photocatalyst and ruthenium complex dye **photosensitizers**)
IT Oxidation catalysts
(photooxidn.; photooxidn. of desmetryne using **titania** photocatalyst and ruthenium complex dye **photosensitizers** in relation to)
IT **13463-67-7, Titania**, processes
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(photooxidn. of desmetryne using **titania** photocatalyst and ruthenium complex dye **photosensitizers**)
IT 108-80-5, Cyanuric acid 12654-97-6D, Triazine, derivs.
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); FORM (Formation, nonpreparative); PROC (Process)
(photooxidn. of desmetryne using **titania** photocatalyst and ruthenium complex dye **photosensitizers**)
IT 3352-57-6, Hydroxyl, reactions
RL: FMU (Formation, unclassified); PEP (Physical, engineering or chemical process); RCT (Reactant); FORM (Formation, nonpreparative); PROC (Process); RACT (Reactant or reagent)
(photooxidn. of desmetryne using **titania** photocatalyst and ruthenium complex dye **photosensitizers**)
IT 1014-69-3, Desmetryne
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(photooxidn. of desmetryne using **titania** photocatalyst and ruthenium complex dye **photosensitizers**)

IT **7722-84-1, Hydrogen peroxide**, reactions
RL: PEP (Physical, engineering or chemical process); RCT (Reactant); PROC (Process); RACT (Reactant or reagent)
(photooxidn. of desmetryne using **titania** photocatalyst and ruthenium complex dye **photosensitizers** in presence of **hydrogen peroxide**)

IT 97333-46-5 131681-30-6 178555-82-3
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(sensitizer; photooxidn. of desmetryne using **titania** photocatalyst and ruthenium complex dye **photosensitizers**)

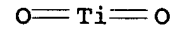
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 10 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:646207 HCAPLUS
DOCUMENT NUMBER: 127:339101
TITLE: Formation of OH radicals on **TiO2** -SiO2-MgO reacted with H2O
AUTHOR(S): Ikuo, A.; Takagi, M.; Kabasawa, N.; Yoshinaga, Y.; Teratani, S.; Hasegawa, S.
CORPORATE SOURCE: Department of Chemistry, Tokyo Gakugei University, Koganei-shi, Tokyo, 184, Japan
SOURCE: Applied Surface Science (**1997**), 121/122, 513-516
CODEN: ASUSEE; ISSN: 0169-4332
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB **TiO2**-SiO2-MgO catalyst was prepd. and the OH radicals formed on the catalyst contacted with water were studied by the spin-trapping method. The condition of the catalyst **surface** that can produce OH radicals is optimized. The initial concn. of OH radicals on the **surface** does not influence the rate of the photocatalytic decompn. of **hydrogen peroxide.**

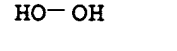
IT **13463-67-7, Titanium oxide (TiO2)**, uses
RL: CAT (Catalyst use); USES (Uses)
(photocatalytic activity of **TiO2**-SiO2-MgO tertiary catalyst system)

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IT **7722-84-1, Hydrogen peroxide**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photocatalytic activity of **TiO2**-SiO2-MgO tertiary catalyst system)

RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)



CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 67
ST photocatalyst **titania** silica magnesium oxide ESR; hydroxyl radical spin trapping tertiary photocatalyst; **hydrogen peroxide** photolysis titanium silicon magnesium
IT ESR (electron spin resonance)
Photolysis
Photolysis catalysts
Spin trapping
(photocatalytic **activity** of **TiO2**-SiO2-MgO tertiary catalyst system)
IT Radicals, formation (nonpreparative)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(photocatalytic activity of **TiO2**-SiO2-MgO tertiary catalyst system)
IT 1309-48-4, Magnesium oxide (MgO), uses 7631-86-9, Silica, uses **13463-67-7**, **Titanium oxide (TiO2**), uses
RL: CAT (Catalyst use); USES (Uses)
(photocatalytic activity of **TiO2**-SiO2-MgO tertiary catalyst system)
IT 3352-57-6, Hydroxyl, formation (nonpreparative)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(photocatalytic activity of **TiO2**-SiO2-MgO tertiary catalyst system)
IT **7722-84-1**, **Hydrogen peroxide**, reactions
7732-18-5, Water, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photocatalytic activity of **TiO2**-SiO2-MgO tertiary catalyst system)
IT 3317-61-1, 5,5-Dimethyl-1-pyrroline-N-oxide
RL: NUU (Other use, unclassified); USES (Uses)
(spin-trapping reagent; photocatalytic activity of **TiO2** -SiO2-MgO tertiary catalyst system)
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L49 ANSWER 11 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:218817 HCAPLUS
DOCUMENT NUMBER: 126:268257
TITLE: A new photochemical reactor design for the treatment of absorbing solutions
AUTHOR(S): Karpel Vel Leitner, N.; Le Bras, E.; Foucault, E.; Bousgarbies, J.-L.
CORPORATE SOURCE: Lab. Chimie l'Eau et Nuisances, URA 1478, Ecole Superieure d'Ingenieurs de Poitiers, Poiters, 86022, Fr.
SOURCE: Water Science and Technology (**1997**), 35(4, Oxidation Technologies for Water and Wastewater Treatment), 215-222
CODEN: WSTED4; ISSN: 0273-1223
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The recent developments in the field of Advanced Oxidn. Processes (AOP) require improvements in reactor design. Indeed, light-induced procedures cannot be used for the removal of trace pollutants in strongly absorbing solns. In this work, the tech. design concept

for mixing in a cylindrical reactor has been approached in a rational way for the treatment of compds. in highly absorbing solns. The new photochem. reactor perfected in our lab. consists of an annular **reactor** with one **UV** lamp in an axial position. However, this reactor differs from classical ones in that the rotation of the quartz sleeve protecting the lamp assocd. with the flux of the soln. establishes a Couette-Taylor type flow. This means that toroidal eddies are formed between the two **surfaces** of the cylindrical reactor, and thus, periodically, each fraction of liq. comes near the UV source. Three photochem. processes with irradn. at 254 nm have been examd.: direct photolysis, **H2O2**/UV, and **TiO2**/UV for the removal of org. trace pollutants such as atrazine and aliph. acids in strongly absorbant solns. P-nitrophenol in the concn. range 1.0-2.3 nmol/L has been added to the water to be treated as a product that absorbs 254 nm light. The overall effect simulates that of an inner filter absorbing incident photons. In several expts., p-nitrophenol was replaced by a mineral component, bentonite. The expts. showed that under these exptl. conditions, for the three photochem. systems, the yield of oxidn. was significantly increased as a result of the rotating movement of the central cylinder. This new design will be able to improve the efficiency of commonly used industrial reactors.

IT **13463-67-7, Titanium oxide (TiO2)**, uses
RL: CAT (Catalyst use); USES (Uses)
(photochem. oxidn. catalyst; photochem. reactor design for the treatment of highly absorbing water and wastewater)

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT **7722-84-1, Hydrogen peroxide (H2O2)**, uses
RL: NUU (Other use, unclassified); USES (Uses)
(photochem. reactor design for the treatment of highly absorbing water and wastewater by UV irradn. and **H2O2**)

RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)

HO—OH

CC 61-5 (Water)
Section cross-reference(s): 47, 60, **74**

ST photochem reactor design highly absorbing liq; water photochem treatment photochem reactor design; wastewater photochem treatment photochem reactor design; atrazine removal photochem oxidn reactor design; nitrophenol removal photochem oxidn reactor design; peroxide **UV** water wastewater **reactor** design; **titania UV** water wastewater **reactor** design

IT **13463-67-7, Titanium oxide (TiO2)**, uses
RL: CAT (Catalyst use); USES (Uses)
(photochem. oxidn. catalyst; photochem. reactor design for the

treatment of highly absorbing water and wastewater)
IT **7722-84-1**, **Hydrogen peroxide** (**H2O2**), uses
RL: NUU (Other use, unclassified); USES (Uses)
(photochem. reactor design for the treatment of highly absorbing water and wastewater by UV irradn. and **H2O2**)

L49 ANSWER 12 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:803315 HCAPLUS
DOCUMENT NUMBER: 123:301235
TITLE: Heterogeneous photocatalytic systems: Influence of some operational variables on actual photons absorbed by aqueous dispersions of **TiO2**
AUTHOR(S): Augugliaro, Vincenzo; Loddo, Vittorio; Palmisano, Leonardo; Schiavello, Mario
CORPORATE SOURCE: Dipartimento di Ingegneria Chimica dei Processi e dei Materiali, University of Palermo, Viale delle Scienze, Palermo, 90128, Italy
SOURCE: Solar Energy Materials and Solar Cells (**1995**), 38(1-4), 411-19
CODEN: SEMCEQ; ISSN: 0927-0248
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The photooxidn. of phenol in aq. soln. in the presence of polycryst. **TiO2** powder was used as "test" reaction in order to investigate the influence of incident light intensity and of some phys. and chem. parameters on the actual absorbed photon flows and on the reactivity. The phys. parameters investigated were the **surface** area and the size of particles while the chem. parameters investigated were the initial pH of the dispersion and the presence in the reacting medium of additives affecting the **photoreactivity** such as Cl- and **H2O2**.
IT **13463-67-7**, **Titania**, processes
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(effect of operational variables on actual photons absorbed by aq. dispersions of **titania** heterogeneous photocatalytic systems)
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST heterogeneous photocatalytic **titania** dispersion phenol photooxidn; optical property heterogeneous photocatalytic **titania** dispersion; water heterogeneous photocatalytic **titania** dispersion
IT Optical absorption
Surface area
(effect of operational variables on actual photons absorbed by aq. dispersions of **titania** heterogeneous photocatalytic systems)
IT Water purification
(effect of operational variables on actual photons absorbed by aq. dispersions of **titania** heterogeneous photocatalytic

systems in relation to)
IT Photolysis catalysts
(photooxidn. of phenol in study of effect of operational variables on actual photons absorbed by aq. dispersions of **titania** heterogeneous photocatalytic systems)
IT **13463-67-7**, **Titania**, processes
RL: CAT (Catalyst use); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(effect of operational variables on actual photons absorbed by aq. dispersions of **titania** heterogeneous photocatalytic systems)
IT 108-95-2, Phenol, processes
RL: PEP (Physical, engineering or chemical process); PROC (Process)
(photooxidn. of phenol in study of effect of operational variables on actual photons absorbed by aq. dispersions of **titania** heterogeneous photocatalytic systems)

L49 ANSWER 13 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:272998 HCAPLUS
DOCUMENT NUMBER: 122:42515
TITLE: SINDO1 Study of Photocatalytic Formation and Reactions of OH Radicals at Anatase Particles
AUTHOR(S): Bredow, Thomas; Jug, Karl
CORPORATE SOURCE: Universitaet Hannover, Hannover, 30167, Germany
SOURCE: Journal of Physical Chemistry (**1995**), 99(1), 285-91
CODEN: JPCHAX; ISSN: 0022-3654
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Model calcns. are performed with the semiempirical MO method SINDO1 to study the photocatalytic primary reactions at anatase particles in aq. soln. The photochem. formation and migration of hydroxyl radicals is investigated at the particle **surface**, leading to the formation of **hydrogen peroxide** or peroxide groups. These reactions represent the first step of the oxidative part of the photocatalytic decompn. into oxygen and hydrogen. The anatase particles are simulated by (**TiO2**)n(H2O)m clusters with structures corresponding to the anatase solid-state structure. With these clusters the photophys. properties of the anatase particles and the **photoreactions** are calcd. on the SCF and CI level. The **photoreactions** are described by potential curves along selected reaction coordinates.
CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 65, 67
IT Clusters
Potential energy **surface** and hypersurface
(cluster model of anatase particles in quantum chem. calcns. of primary processes in photocatalytic reactions)

L49 ANSWER 14 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:231583 HCAPLUS
DOCUMENT NUMBER: 122:38025
TITLE: Characterization of **TiO2** photocatalysts used in trichloroethene oxidation
AUTHOR(S): Larson, Sheldon A.; Falconer, John L.
CORPORATE SOURCE: Department of Chemical Engineering, University of Colorado, Boulder, CO, 80309-0424, USA

SOURCE: Applied Catalysis, B: Environmental (**1994**), 4(4), 325-42
CODEN: ACBEE3; ISSN: 0926-3373
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Kinetic studies show deactivation of **TiO2** catalysts during aq.-phase and gas-phase photooxidn. of trichloroethene (TCE). Temp.-programmed desorption (TPD) and XPS were used to examine adsorbed species on **TiO2** photocatalyst **surfaces** after reaction, and TPD was used to det. how reactants and products adsorb on the **TiO2 surface.** Used and deactivated catalysts were analyzed after participating in either aq.-phase or gas-phase photooxidn. of TCE. The XPS spectra showed little difference between the **surface** compn. of fresh **TiO2** and that of a deactivated catalyst from the aq.-phase **photoreactor.** Cl was obsd. only on catalysts used in the gas-phase photocatalytic decompn. of TCE. Differences due to **photoreaction** were obsd. in TPD spectra of water, CO, and CO2. The total amt. desorbed and the temp. of desorption of CO and CO2 were quite different for used and deactivated catalysts from the 2 **photoreactions.** Apparently strongly bound species, such as carbonates, accumulated on the **surface** and formed CO upon high-temp. decompn. Small amts. of chlorinated compds. desorbed from the used and deactivated catalysts following gas-phase **photoreaction.** Dichloroacetyl chloride (DCAC), a reaction intermediate, can adsorb strongly on **TiO2** and readily displaces TCE. Thermally decompd. DCAC reduces the no. of available adsorption sites for DCAC and TCE. A low-temp. O desorption peak was obsd. from catalysts treated with **H2O2**, which improves catalytic activity. This indicates that **H2O2** is stable on **TiO2** at room temp. and decomps. at 420 K.

IT **13463-67-7, Titania,** uses
RL: CAT (Catalyst use); USES (Uses)
(characterization of **titania** photocatalysts for in trichloroethene oxidn. in wastewater)

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

CC 60-2 (Waste Treatment and Disposal)
Section cross-reference(s): **74**

ST **titania** photocatalyst trichloroethene oxidn wastewater

IT Kinetics of oxidation
Oxidation catalysts
(characterization of **titania** photocatalysts for in trichloroethene oxidn. in wastewater)

IT Wastewater treatment
(oxidn., photochem., characterization of **titania** photocatalysts for in trichloroethene oxidn.)

IT **13463-67-7, Titania,** uses
RL: CAT (Catalyst use); USES (Uses)
(characterization of **titania** photocatalysts for in trichloroethene oxidn. in wastewater)

IT 630-08-0, Carbon monoxide, formation (nonpreparative)
RL: FMU (Formation, unclassified); FORM (Formation, nonpreparative)
(characterization of **titania** photocatalysts for in

trichloroethene oxidn. in wastewater)
IT 79-01-6, Trichloroethene, reactions
RL: RCT (Reactant); REM (Removal or disposal); PROC (Process); RACT (Reactant or reagent)
(characterization of **titania** photocatalysts for in trichloroethene oxidn. in wastewater)

L49 ANSWER 15 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1994:566770 HCAPLUS
DOCUMENT NUMBER: 121:166770
TITLE: Kinetics of Hydroxyl Radical Spin Trapping in **Photoactivated** Homogeneous (**H2O2**) and Heterogeneous (**TiO2**, O2) Aqueous Systems
AUTHOR(S): Brezova, V.; Stasko, A.; Biskupic, S.; Blazkova, A.; Havlinova, B.
CORPORATE SOURCE: Faculty of Chemical Technology, Slovak Technical University, Bratislava, 812 37, Slovakia
SOURCE: Journal of Physical Chemistry (**1994**), 98(36), 8977-84
CODEN: JPCHAX; ISSN: 0022-3654
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Homogeneous (**H2O2**) and heterogeneous (**TiO2** + O2) aquatic photochem. systems were compared in their ability to generate hydroxyl radicals and to decomp. p-toluenesulfonic acid (PTS) in buffered and unbuffered solns. The kinetics of hydroxyl radical formation were monitored with 5,5-dimethyl-1-pyrroline N-oxide (DMPO) spin trap. The zero ζ potential measured in aq. **TiO2** suspensions was found at pH = 6, but ζ potentials shifted to considerably more neg. values in phosphate-borate buffers. Consequently, a well-defined PTS adsorption isotherm on the **TiO2 surface** was found in unbuffered systems, and no PTS and DMPO adsorption was measurable in the phosphate-borate buffer, due to the competitive adsorption of buffer ions. The identical dependence of DMPO-OH formation on PTS concns. in both homogeneous and heterogeneous buffered systems along with ζ potential and adsorption measurements suggests that the reaction of •OH radicals, their addn. to DMPO and the oxidative degrdn. of PTS, is taking place (in the presence of phosphate-borate buffer) in the homogeneous phase, with radicals leaving the **TiO2 surface.**
IT **13463-67-7, Titania**, properties
RL: PRP (Properties)
(photolysis of aq. suspensions contg. oxygen and, in presence of toluenesulfonate, spin trapping of hydroxyl radicals produced in)
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O=Ti=O

IT **7722-84-1, Hydrogen peroxide, reactions**
RL: RCT (Reactant); RACT (Reactant or reagent)
(**photolysis** of aq., in presence of toluenesulfonate, spin trapping of hydroxyl radicals produced in)
RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)

HO—OH

CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST photolysis **hydrogen peroxide titania** oxygen aq; photocatalyst aq **titania** oxygen hydroxyl prodn; hydroxyl radical photogeneration spin trapping; toluenosulfonate hydroxyl **reaction** aq **photolysis** photocatalysis; zeta potential **titanium dioxide** photocatalyst particle
IT Kinetics of photolysis
Photolysis
(of homogeneous **hydrogen peroxide** and heterogeneous **titania** + oxygen aq. systems in presence of toluenesulfonate, spin trapping of hydroxyl radicals produced in)
IT Adsorption
(of toluenesulfonic acid on **titanium dioxide** photocatalyst particle, isotherm)
IT Electrokinetic potential
(**surface**, of **titanium dioxide** photocatalyst particle)
IT Photolysis catalysts
(**titania** + oxygen in aq. suspensions, generation of hydroxyl radicals in)
IT Trapping and Traps
(spin, of hydroxyl radicals produced in photolysis of homogeneous **hydrogen peroxide** and heterogeneous **titania** + oxygen aq. systems in presence of toluenesulfonate)
IT **13463-67-7**, **Titania**, properties
RL: PRP (Properties)
(photolysis of aq. suspensions contg. oxygen and, in presence of toluenesulfonate, spin trapping of hydroxyl radicals produced in)
IT 7782-44-7, Oxygen, **reactions**
RL: RCT (Reactant); RACT (Reactant or reagent)
(**photolysis** of aq. suspensions contg. **titania** and, in presence of toluenesulfonate, spin trapping of hydroxyl radicals produced in)
IT **7722-84-1**, **Hydrogen peroxide**, **reactions**
RL: RCT (Reactant); RACT (Reactant or reagent)
(**photolysis** of aq., in presence of toluenesulfonate, spin trapping of hydroxyl radicals produced in)

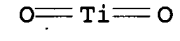
L49 ANSWER 16 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:95357 HCAPLUS
DOCUMENT NUMBER: 116:95357
TITLE: Role of adsorption in photocatalyzed reactions of organic molecules in aqueous **titania** suspensions
AUTHOR(S): Minero, Claudio; Catozzo, Flavio; Pelizzetti, Ezio
CORPORATE SOURCE: Dip. Chim. Anal., Univ. Torino, Turin, 10125, Italy
SOURCE: Langmuir (**1992**), 8(2), 481-6
CODEN: LANGD5; ISSN: 0743-7463

DOCUMENT TYPE: Journal
LANGUAGE: English

AB The photocatalyzed transformation of chem. compds. strongly adsorbed on a particle **surface** was investigated in the presence of different **photoactive** and "inert" supports. For several compds., such as dioctylquinol and chrysene, the rate of degrdn. is only slightly affected by the initial adsorption onto nonphotocatalytic materials (SiO2, Al2O3) when irradiated in a slurry with added micrometer size **TiO2** particles. A rapid exchange of the substrate between the different inorg. supports was exptl. obsd. and explains the photocatalytic results. Decafluorobiphenyl (DFBP), which adsorbs tenaciously on Al2O3, degrades slowly when irradiated in the presence of **TiO2** particles. Measurements confirm that DFPB is poorly exchanged from alumina to **TiO2**. Comparison with the results obtained using colloidal **TiO2** or silica particles, and with the behavior of pentafluorophenol, under otherwise identical conditions, suggests that the photogenerated oxidizing species does not migrate far from the photogenerated active centers and that the degrdn. process occurs at the **surface** or within a few monolayers around the photocatalytic particles.

IT **13463-67-7**, **Titania**, properties
RL: PRP (Properties)
(photocatalytic degrdn. of org. mols. in aq. suspensions of, role of adsorption in)

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IT **7722-84-1**, **Hydrogen peroxide**, properties
RL: PRP (Properties)
(photocatalytic degrdn. of org. mols. in aq. **titania** suspensions in presence of)

RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)

CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 60, 66, 67

ST photocatalysis org contaminant water adsorption; kinetics photolysis org pollutant degrdn water; water purifn photochem catalysis **titania** adsorption; fluorobiphenyl photochem degrdn water pollution catalysis; **titania** photocatalyst org degrdn water purifn; oxidn org contaminant water purifn photolysis

IT Kinetics of photolysis
(of org. mols. in aq. **titania** suspensions, oxidative degrdn. process in)

IT Adsorption
(of org. mols. on catalyst **titania** or inert silica or alumina, photocatalytic degrdn. process in)

IT Oxidation, photochemical
(of org. mols. using aq. **titania** suspensions, in water purifn.)

IT Adsorbed substances
(org. mols. on catalyst **titania** or inert silica or alumina, photocatalytic degrdn. process in)
IT Photolysis catalysts
(**titania**, in purifn. of water from org. contaminants, role of adsorption in)
IT Water purification
(photolysis, for org. mols. removal using aq. **titania** suspensions, role of adsorption in)
IT **13463-67-7**, **Titania**, properties
RL: PRP (Properties)
(photocatalytic degrdn. of org. mols. in aq. suspensions of, role of adsorption in)
IT **7722-84-1**, **Hydrogen peroxide**, properties
RL: PRP (Properties)
(photocatalytic degrdn. of org. mols. in aq. **titania** suspensions in presence of)
IT 1344-28-1, Alumina, properties 7631-86-9, Silica, properties
RL: PRP (Properties)
(photocatalytic degrdn. of org. mols. in aq. **titania** suspensions in presence of inert material of, role of adsorption in degrdn. process)
IT 218-01-9, Chrysene 434-90-2, Decafluorobiphenyl 771-61-9, Pentafluorophenol 903-19-5
RL: USES (Uses)
(photocatalytic oxidn. of, in aq. suspensions of **titania**, role of adsorption in)
IT 7732-18-5P, Water, preparation
RL: PUR (Purification or recovery); PREP (Preparation)
(purifn. of, org. contaminant photocatalytic oxidn. in presence of **titania** suspension in)

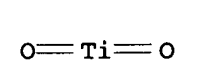
L49 ANSWER 17 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:91035 HCAPLUS
DOCUMENT NUMBER: 116:91035
TITLE: Advanced technology for destruction of organic pollutants by photocatalysis
AUTHOR(S): Al-Ekabi, Hussain; Safarzadeh-Amiri, Ali; Story, Joan; Sifton, Wendy
CORPORATE SOURCE: Nutech Energy Syst. Inc., London, ON, N6E 2S8, Can.
SOURCE: Proc. - Symp. Adv. Oxid. Processes Treat. Contam. Water Air (**1990**), Paper No. 11, 12 pp.. Wastewater Technol. Cent.: Burlington, Ont.
CODEN: 57MQAI
DOCUMENT TYPE: Conference
LANGUAGE: English
AB The **TiO2** photocatalytic degrdn. of 2,4-dichlorophenol (I), pentachlorophenol (II), and nitrobenzene (III) was examd. In 12 min, it was possible to decrease I from 10 to 0.5 ppm and, in a sep. expt., to decrease II from 100 to 0.5 ppb. The effect of flow rate on the degrdn. of I in single pass and multi-pass operation modes was investigated. In single, the conversion of I initially decreased with increasing the flow rate and reached a plateau at .apprx.1-1.5 L/min. This indicates that the reactor operates more efficiently at higher flow rates. In the multi-pass expts., the degrdn. rate of I increased non-linearly with the flow rate. The degrdn. rate of I increased and the degrdn. rate const. decreased with increasing concn. of I. The results are explained in terms of

surface heterogeneity of **TiO2**. Partial removal of O through the introduction of N just before the **photoreactor** decreased the degrdn. rate significantly. However, introducing O or air increased the degrdn. rate considerably. The addn. of **H2O2** improved the degrdn. rate of I and III.

IT **13463-67-7**, **Titania**, uses
RL: CAT (Catalyst use); USES (Uses)
(catalysts, chlorophenol and nitrobenzene photodegrdn. in water in presence of)

RN 13463-67-7 HCAPLUS

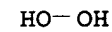
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IT **7722-84-1**, **Hydrogen peroxide**, uses
RL: USES (Uses)
(chlorophenol and nitrobenzene photodegrdn. in water in presence of **titania** in response to)

RN 7722-84-1 HCAPLUS

CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)



CC 61-5 (Water)
Section cross-reference(s): 67, **74**

IT Photolysis catalysts
(**titania**, chlorophenol and nitrobenzene photodegrdn. in water in presence of)

IT Water purification
(UV irradn., chlorophenol and nitrobenzene removal by, in presence of **titania**)

IT Water purification
(photolysis, chlorophenol and nitrobenzene removal by, in presence of **titania**)

IT **13463-67-7**, **Titania**, uses
RL: CAT (Catalyst use); USES (Uses)
(catalysts, chlorophenol and nitrobenzene photodegrdn. in water in presence of)

IT **7722-84-1**, **Hydrogen peroxide**, uses
7782-44-7, Oxygen, uses
RL: USES (Uses)
(chlorophenol and nitrobenzene photodegrdn. in water in presence of **titania** in response to)

IT 87-86-5, Pentachlorophenol 98-95-3, Nitrobenzene, miscellaneous
120-83-2, 2,4-Dichlorophenol
RL: REM (Removal or disposal); PROC (Process)
(removal of, from water, by photocatalytic degrdn., **titania** in)

L49 ANSWER 18 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:153817 HCAPLUS
DOCUMENT NUMBER: 114:153817
TITLE: Photocatalytic degradation of phenol in aqueous polycrystalline **titanium dioxide** dispersions: the influence of iron(3+), iron(2+) and silver(1+) on the

reaction rate
AUTHOR(S): Sclafani, Antonino; Palmisano, Leonardo; Davi, Eugenio
CORPORATE SOURCE: Dip. Ing. Chim. Processi Mater., Univ. Palermo, Palermo, 90128, Italy
SOURCE: Journal of Photochemistry and Photobiology, A: Chemistry (1991), 56(1), 113-123
CODEN: JPPCEJ; ISSN: 1010-6030
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The effects of Fe3+, Fe2+, and Ag+ on phenol photodegrdn. in the aq. polycryst. **TiO2** (anatase) and **TiO2** (rutile) dispersions was studied. These ions can react very easily with peroxo species produced on the catalyst **surface** and/or in the soln. Exptl. conditions for the continuous photoprodn. of Fenton reagent can be achieved in this way. Max. **photoactivity** was obsd. for **TiO2** (anatase) in the presence of O and [Fe3+] = 5 + 10-4 M. The behavior of Fe2+ was similar to Fe3+ for the same exptl. conditions. Anatase **photoactivity** was influenced beneficially in the presence of O and [Ag+] = 10-4 M.

IT **7722-84-1**, **Hydrogen peroxide**, properties
RL: PRP (Properties)
(photocatalytic activity of **titanium dioxide** in presence of **surface** absorbed, for degrdn. of phenol)
RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)

HO—OH

IT **13463-67-7**, **Titanium dioxide**, properties
RL: PRP (Properties)
(photocatalytic degrdn. of phenol in aq. dispersion of)
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O═Ti═O

CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST phenol photodegrdn aq **titanium dioxide** catalyst; photocatalysis phenol degrdn water **titania**; photooxidn phenol **titania** water pollution
IT Photolysis
(of phenol aq. suspension contg. **titanium dioxide**, effect of iron and silver ions in)
IT Oxidation, photochemical
(of phenol, in aq. dispersion of **titanium dioxide**, effect of silver ions)
IT Water purification
(photocatalytic degrdn. of phenol in **titania** suspension in relation to)
IT Named reagents and solutions
RL: FORM (Formation, nonpreparative)
(Fenton's, formation of, in photocatalytic phenol degrdn. in aq. **titania** suspensions)

IT Kinetics of oxidation
(photochem., of phenol, in aq dispersion of **titanium dioxide**, effect of silver ions)
IT Oxidation catalysts
(photochem., **titanium dioxide**, for degrdn. of phenols in water, effect of silver ions on)
IT 124-38-9P, Carbon dioxide, preparation
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)
(formation and reaction of, in photocatalytic degrdn. of phenol in aq. **titanium dioxide** dispersion)
IT 7782-44-7, Oxygen, properties
RL: PRP (Properties)
(photocatalytic activity of **titanium dioxide** in presence of **surface** absorbed, degrdn.)
IT 7440-59-7, Helium, properties **7722-84-1**, **Hydrogen peroxide**, properties
RL: PRP (Properties)
(photocatalytic activity of **titanium dioxide** in presence of **surface** absorbed, for degrdn. of phenol)
IT 1317-70-0, Anatase (**TiO2**) 1317-80-2, Rutile (**TiO2**)
RL: USES (Uses)
(photocatalytic degrdn. of phenol in aq. dispersion of)
IT **13463-67-7**, **Titanium dioxide**, properties
RL: PRP (Properties)
(photocatalytic degrdn. of phenol in aq. dispersion of)
IT 14701-21-4, Silver(1+), uses and miscellaneous 15438-31-0, Iron(2+), uses and miscellaneous 20074-52-6, Iron(3+), uses and miscellaneous
RL: USES (Uses)
(photocatalytic degrdn. of phenol in aq. **titanium dioxide** dispersion contg.)

L49 ANSWER 19 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:91727 HCAPLUS
DOCUMENT NUMBER: 114:91727
TITLE: Photocatalytic oxidation of phenol in the presence of **hydrogen peroxide** and **titanium dioxide** powders
AUTHOR(S): Wei, Tsong Yang; Wang, Yung Yun; Wan, Chi Chao
CORPORATE SOURCE: Dep. Chem. Eng., Natl. Tsing Hua Univ., Hsinchu, Taiwan
SOURCE: Journal of Photochemistry and Photobiology, A: Chemistry (**1990**), 55(1), 115-26
CODEN: JPPCEJ; ISSN: 1010-6030
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The effect of **H2O2** on the photocatalytic oxidn. of phenol on illuminated **TiO2 surfaces** was investigated. The exptl. results indicate that transition metal ions, such as Fe3+ and Cu2+, affect the photocatalytic oxidn. of phenol. In the absence of added **H2O2**, Fe3+ induce the occurrence of the **photo**-Fenton-type **reaction** so that the phenol removal of an initial 1000 mg L-1 soln. is enhanced from 23 to 33% within 8 h. However, the Cu2+ ions show a neg. effect. In the presence of added **H2O2**, both the Fe3+ and Cu2+ ions enhance the phenol oxidn. rate drastically. A 1000 mg L-1 phenol soln. can be completely decompd. within 1 h and the total org. carbon removal reaches 80%. A reaction mechanism which involves the generation of hydroxyl radicals is proposed.

IT **13463-67-7, Titanium dioxide**, uses and miscellaneous
RL: USES (Uses)
(photocatalytic oxidn. of phenol in presence of **hydrogen peroxide** and powder of)
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

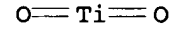
IT **7722-84-1, Hydrogen peroxide**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photocatalytic oxidn. of phenol in presence of **titanium dioxide** powder and)
RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)

CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 60, 61
ST photooxidn phenol catalyzed **titania hydrogen peroxide**
IT Oxidation, photochemical
(of phenol, in presence of **hydrogen peroxide** and **titanium dioxide** powder)
IT Wastewater treatment
(oxidn., photochem., for catalyzed removal of phenol in presence of **hydrogen peroxide** and **titanium dioxide** powder)
IT Oxidation catalysts
(photochem., **titanium dioxide** powder in presence of **hydrogen peroxide**, for phenol)
IT Water purification
(photooxidn., for catalyzed removal of phenol in presence of **hydrogen peroxide** and **titanium dioxide** powder)
IT **13463-67-7, Titanium dioxide**, uses and miscellaneous
RL: USES (Uses)
(photocatalytic oxidn. of phenol in presence of **hydrogen peroxide** and powder of)
IT 15158-11-9, Copper(2+), reactions 20074-52-6, Iron(3+), reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photocatalytic oxidn. of phenol in presence of **hydrogen peroxide** and **titanium dioxide** powder and)
IT **7722-84-1, Hydrogen peroxide**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photocatalytic oxidn. of phenol in presence of **titanium dioxide** powder and)
IT 108-95-2, Phenol, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photocatalytic oxidn. of, in presence of **hydrogen peroxide** and **titanium dioxide** powder)

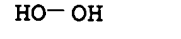
L49 ANSWER 20 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1988:483082 HCAPLUS
DOCUMENT NUMBER: 109:83082
TITLE: Controlled suppression or enhancement of the **photoactivity** of **titanium dioxide** (rutile) pigment
AUTHOR(S): Heller, A.; Degani, Y.; Johnson, D. W., Jr.; Gallagher, P. K.
CORPORATE SOURCE: AT and T Bell Lab., Murray Hill, NJ, 07974, USA
SOURCE: Proceedings - Electrochemical Society (**1988**), 88-14(Photoelectrochem. Electrosynthesis Semicond. Mater.), 23-33
CODEN: PESODO; ISSN: 0161-6374
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The variation in the quantum yield of a **photoreaction** of an org. adsorbate on an **TiO2** pigment particle is considered. The yield depends on the ratio of the rate of oxidn. of the org. adsorbate by holes to the sum of the **surface** and bulk electron-hole recombination rates. At low bulk-recombination rate the quantum efficiency was controlled by the **surface** -d. of electrons. This d. was detd. by the barrier height, i.e., the Fermi level of the particles. Redn. of the particles raises their Fermi level, correspondingly increases the height of the potential-barriers that repel electrons from the **surface**, reduces the rate of **surface**-recombination, and thereby increases the quantum yield. Oxidn. of the particles lowers their Fermi level and thereby the quantum yield. In reduced particles, i.e. when the **surface**-recombination rate is low, bulk-defects dominate the recombination process. In this case the **photoactivity** of the particles decreases upon ball milling under clean conditions and increases upon removal of the lattice defects through etching by boiling mineral acids. When combined, oxidn./redn. and mech. damage/etching allow controlled variation of the **photoactivity** of the 0.2 μm particles by 2 orders of magnitude.

IT **13463-67-7**, **Titanium dioxide**, properties
RL: PRP (Properties)
(**photoactivity** of pigment of, controlled suppression or enhancement of)
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IT **7722-84-1**, **Hydrogen peroxide**, uses and miscellaneous
RL: USES (Uses)
(**photoactivity** of **titanium dioxide** pigment in water soln. contg.)
RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)



CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 41, 42
ST **titanium dioxide** pigment **photoactivity** control; photocatalyst **titania** activity control
IT Etching
(by acids, of **titanium dioxide** pigment particles, control of **photoactivity** by)
IT Photolysis catalysts
(**titanium dioxide** particles, controlled suppression or enhancement of activity of)
IT Size reduction
(milling, ball, of **titanium dioxide** pigment, for control of **photoactivity** of)
IT Catalysts and Catalysis
(photochem., **titanium dioxide** pigment particles as, controlled suppression or enhancement of **photoactivity** of)
IT Oxidation
Reduction
(thermal, of **titanium dioxide** pigment particles, control of **photoactivity** by)
IT **13463-67-7**, **Titanium dioxide**, properties
RL: PRP (Properties)
(**photoactivity** of pigment of, controlled suppression or enhancement of)
IT 4685-14-7, Methylviologen(2+) **7722-84-1**, **Hydrogen peroxide**, uses and miscellaneous 25239-55-8
RL: USES (Uses)
(**photoactivity** of **titanium dioxide** pigment in water soln. contg.)
IT 7647-01-0, Hydrochloric acid, properties 7664-93-9, Sulfuric acid, properties
RL: PRP (Properties)
(**photoactivity** of **titanium dioxide** pigment particles etched by)
IT 67-63-0, Isopropanol, uses and miscellaneous
RL: USES (Uses)
(**photoactivity** of **titanium dioxide** pigment particles subjected to different modification treatment in system contg.)
IT 102-71-6, Triethanolamine, properties 108-94-1, Cyclohexanone, properties
RL: PRP (Properties)
(**photoactivity** of **titanium dioxide** pigment particles thermally reduced by)
IT 75-59-2, Tetramethylammonium hydroxide
RL: USES (Uses)
(**photoactivity** of **titanium oxide** pigment particles subjected to acid etching followed by boiling in)

L49 ANSWER 21 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1988:175894 HCAPLUS
DOCUMENT NUMBER: 108:175894
TITLE: Thermodynamic and kinetic considerations about water splitting and competitive reactions in a photoelectrochemical cell
AUTHOR(S): Salvador, P.
CORPORATE SOURCE: Inst. Catal. Petroleoquim., CSIC, Madrid, 28006,

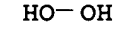
Spain
SOURCE: New Journal of Chemistry (**1988**), 12(1), 35-43
CODEN: NJCHE5; ISSN: 1144-0546
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Considerations about thermodn. and kinetic requirements for H2O splitting at n-type semiconductors are presented. A main point in H2O photooxidn. concerns the catalytic role that the semiconductor must play to minimize the overvoltage for evolution of O. In this respect, 2 groups of materials with different catalytic properties must be distinguished. A 1st group of low-bandgap semiconductors with small electronic affinity, is well represented by transition metal chalcogenides with a cationic valence band of d character. A main feature of these materials concerns the facility for the transition metal cation to reach high oxidn. states, promoting the generation of unstable **surface** peroxo complexes from strongly metal coordinated OH radicals. A 2nd group of large bandgap semiconductors with high ionization potential, is mainly represented by semiconducting oxides, with the following properties: (1) facilitate chemisorption of H2O, promoting the formation OH radical assocd. bandgap **surface** states; (2) catalytic ability for generation of **H2O2** intermediates from photogenerated OH radicals; (3) facility for strong coordination of **H2O2** with the semiconductor **surface.** On the basis of previous results about H2O splitting at n-**TiO2** electrodes and of the literature data on the electrocatalytic evolution of O at RuO2, the best metallic catalyst known to date for the min. overvoltage for H2O photooxidn. was estd. of the order of 0.6 eV, which fixes the min. semiconductor bandgap at .apprx.1.8 eV. Implications of the model in **photoreactions** competing with H2O splitting are discussed.
CC 72-9 (Electrochemistry)
Section cross-reference(s): **74**

L49 ANSWER 22 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:608578 HCAPLUS
DOCUMENT NUMBER: 107:208578
TITLE: Controlled suppression or enhancement of the **photoactivity** of **titanium dioxide** (rutile) pigment
AUTHOR(S): Heller, A.; Degani, Y.; Johnson, D. W., Jr.; Gallagher, P. K.
CORPORATE SOURCE: AT and T Bell Lab., Murray Hill, NJ, 07974, USA
SOURCE: Journal of Physical Chemistry (**1987**), 91(23), 5987-91
CODEN: JPCHAX; ISSN: 0022-3654
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The variation in the quantum yield of a **photoreaction** of an org. adsorbate on an n-**TiO2** pigment particle was considered. The yield depends on the ratio of the rate of oxidn. of the org. absorbate by the holes, to the sum of the **surface** and bulk electron-hole recombination rates. At low bulk-recombination rate the quantum efficiency is controlled by the **surface** d. of electrons. This d. was detd. by the barrier height, i.e., the Fermi level of the particles. Redn. of the particles raised the Fermi level, correspondingly increased the height of the potential barriers that repel electrons from the **surface**, reduced the rate of **surface**

recombination, and thereby increased the quantum yield. Correspondingly, oxidn. of the particles lowers their Fermi level and thereby the quantum yield. In reduced particles, i.e., when the **surface**-recombination rate is low, bulk defects dominate the recombination process. In this case the **photoactivity** of the particles decreased upon ball milling under clean conditions and increased upon removal of the lattice defects through etching by boiling mineral acids. When combined, oxidn./redn. and mech. damage/etching allow controlled variation of the **photoactivity** of the 0.2-μm particles by 2 orders of magnitude.

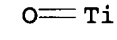
IT **7722-84-1**, **Hydrogen peroxide**, uses and miscellaneous
RL: USES (Uses)
(**photoactivity** of differently treated **titanium dioxide** pigments in air-satd. solns. contg.)

RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)



IT **13463-67-7**, **Titanium dioxide**, properties
RL: PRP (Properties)
(**photoactivity** of, controlled suppression or enhancement of)

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST **titanium dioxide photoactivity** suppression enhancement
IT Photolysis
Photolysis catalysts
(controlled suppression or enhancement of **photoactivity** of **titanium dioxide** for)
IT 75-59-2, Tetramethylammonium hydroxide
RL: USES (Uses)
(etching of **titanium dioxide** in boiling soln. of, for control of **photoactivity** of)
IT 7647-01-0, Hydrochloric acid, reactions 7664-93-9, Sulfuric acid, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(etching of **titanium dioxide** in boiling, for control of **photoactivity** of)
IT 25239-55-8P, Methyl viologen cation radical
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in reducing solns. contg. Me viologen(2+) and EDTA, **photoactivity** of differently treated **titanium dioxide** pigment in)
IT 67-63-0, uses and miscellaneous 7782-44-7, Oxygen, uses and miscellaneous
RL: USES (Uses)
(**photoactivity** of differently treated **titanium**

dioxide pigment in oxidizing solns. contg.)
IT 4685-14-7, Methyl viologen(2+)
RL: USES (Uses)
(**photoactivity** of differently treated **titanium dioxide** pigment in reducing solns. contg.)
IT 60-00-4, EDTA, properties
RL: PRP (Properties)
(**photoactivity** of differently treated **titanium dioxide** pigment in reducing solns. contg. Me viologen(2+) and)
IT 7727-37-9, Nitrogen, properties
RL: PRP (Properties)
(**photoactivity** of differently treated **titanium dioxide** pigment in reducing solns. in atm. of)
IT **7722-84-1**, **Hydrogen peroxide**, uses and miscellaneous
RL: USES (Uses)
(**photoactivity** of differently treated **titanium dioxide** pigments in air-satd. solns. contg.)
IT **13463-67-7**, **Titanium dioxide**, properties
RL: PRP (Properties)
(**photoactivity** of, controlled suppression or enhancement of)
IT 102-71-6, Triethanolamine, reactions 108-94-1, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(redn. of, in treatment of **titanium dioxide** contg., for control of its **photoactivity**)
IT 1344-28-1, uses and miscellaneous
RL: USES (Uses)
(rutile particles contg., **photoactivity** in relation to)

L49 ANSWER 23 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:586995 HCAPLUS
DOCUMENT NUMBER: 107:186995
TITLE: Formation of **hydrogen peroxide** on rutile **titanium dioxide** during photoillumination of oxygen
AUTHOR(S): Vishwanathan, V.
CORPORATE SOURCE: Catal. Sect., Reg. Res. Lab., Hyderabad, 500 007, India
SOURCE: Current Science (**1987**), 56(15), 772-3
CODEN: CUSCAM; ISSN: 0011-3891
DOCUMENT TYPE: Journal
LANGUAGE: English
AB **H2O2** is formed as an intermediate product during O photoadsorption on **TiO2 surfaces** and is thermally decompd. at 323 K to give O as one of the products.
IT **7722-84-1P**, **Hydrogen peroxide**, preparation
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, on rutile **titanium dioxide** during photoexposure of oxygen)
RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)

HO—OH

CC **74-1** (Radiation Chemistry, Photochemistry, and

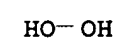
Photographic and Other Reprographic Processes)
ST **photoreaction titania hydrogen peroxide** intermediate; oxygen adsorption **titania hydrogen peroxide**
IT Photolysis
(of oxygen-**titanium dioxide** system, formation of **hydrogen peroxide** intermediate in)
IT 1317-80-2P, Rutile
RL: PREP (Preparation)
(formation of **hydrogen peroxide** on, during photoabsorption of oxygen)
IT **7722-84-1P, Hydrogen peroxide**, preparation
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, on rutile **titanium dioxide** during photoexposure of oxygen)
IT 7782-44-7, Oxygen, properties
RL: PRP (Properties)
(photoabsorption of, on rutile **titanium dioxide**, formation of **hydrogen peroxide** intermediate in)

L49 ANSWER 24 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:93461 HCAPLUS
DOCUMENT NUMBER: 106:93461
TITLE: Specific analysis of **surface**-bound peroxides formed during photoinduced water cleavage in **titanium dioxide** -based microheterogeneous systems
AUTHOR(S): Kiwi, John; Graetzel, Michael
CORPORATE SOURCE: Inst. Chim. Phys., Ec. Polytech. Fed. Lausanne, Lausanne, 1015, Switz.
SOURCE: Journal of Molecular Catalysis (**1987**), 39(1), 63-70
CODEN: JMCADS; ISSN: 0304-5102
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Photolysis of aq. dispersions of **TiO2** (anatase) particles loaded with Pt leads to the generation of H and peroxide. In the pH range investigated (2 ≤pH ≤10) the peroxide is entirely adsorbed at the particle **surface**, presumably in form of a titanium peroxo complex. By using o-tolidine as a redox indicator, a procedure was developed which allows anal. of the peroxide.
IT **13463-67-7, Titanium dioxide**, uses and miscellaneous
RL: USES (Uses)
(catalyst contg. platinum and, photoinduced water decompn. in microheterogeneous system contg., anal. of **surface** -bound peroxides produced in)
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O═Ti═O

IT **7722-84-1P, Hydrogen peroxide**, preparation
RL: FORM (Formation, nonpreparative); PREP (Preparation)

(formation of, **surface**-bound, during photolysis of water in **titanium dioxide**-based microheterogeneous system)
RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)



CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST photolysis water titanic **surface** peroxide
IT Photolysis
(of water, in **titanium dioxide**-based microheterogeneous systems, anal. of **surface**-bound peroxides produced in)
IT **13463-67-7**, **Titanium dioxide**, uses and miscellaneous
RL: USES (Uses)
(catalyst contg. platinum and, photoinduced water decompn. in microheterogeneous system contg., anal. of **surface**-bound peroxides produced in)
IT 7440-06-4, Platinum, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalyst from **titanium dioxide** contg., photoinduced water decompn. in microheterogeneous system contg., anal. of **surface**-bound peroxides produced in)
IT 1333-74-0P, Hydrogen, preparation
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in photolysis of aq. dispersions contg. **titanium dioxide** particles loaded with platinum, anal. of **surface**-bound peroxides produced in)
IT **7722-84-1P**, **Hydrogen peroxide**, preparation
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, **surface**-bound, during photolysis of water in **titanium dioxide**-based microheterogeneous system)
IT 119-93-7, o-Tolidine
RL: USES (Uses)
(in anal. of **surface**-bound peroxides produced during photolysis of water in **titanium dioxide**-based microheterogeneous systems)
IT 7732-18-5, Water, **reactions**
RL: RCT (Reactant); RACT (Reactant or reagent)
(**photolysis** of, in **titanium dioxide**-based microheterogeneous system, anal. of **surface**-bound peroxides produced in)

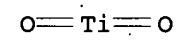
L49 ANSWER 25 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1986:615594 HCAPLUS
DOCUMENT NUMBER: 105:215594
TITLE: Behavior of **surface** peroxo species in the **photoreactions** at **titanium dioxide**
AUTHOR(S): Ulmann, Martine; De Tacconi, Norma R.; Augustynski, Jan
CORPORATE SOURCE: Dep. Chim. Miner. Anal. Appl., Univ. Geneve, Geneva, 1211/4, Switz.

SOURCE: Journal of Physical Chemistry (1986), 90(24), 6523-30
CODEN: JPCHAX; ISSN: 0022-3654
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The electrochem. behavior of the **surface** species photogenerated at a polycryst. **TiO2** film electrode in alk. soln. was investigated by means of cyclic voltammetry. The obtained results are consistent with the same **surface** peroxo titanium species being formed when an illuminated **TiO2** electrode is subjected to an anodic bias or left in open circuit both in the presence and in the absence of O. The decay of these species after the cutoff of illumination was obsd. to occur relatively slowly, about half of their initial amt. being still detectable after 16 h of electrode immersion in NaOH soln. The cathodic redn. of the **surface** peroxo species, photogenerated at the **TiO2** electrode, takes place at distinctly more neg. potentials than that of dissolved mol. O and that of both preadsorbed and dissolved **H2O2**. The latter species (present mainly as HO2-) were also obsd. to undergo rapid photooxidn. at the **TiO2** photoanode, competing efficiently for pos. holes with OH-. These findings do not support the earlier postulated involvement of the **H2O2** as an intermediate of the **photoreaction** leading to O evolution. The pathways for the photooxidn. reactions at **TiO2** are briefly discussed in connection with the proposed mechanism of formation of the **surface** peroxotitanium species. Their role in controlling the **surface** electron-hole recombination, particularly at dispersed **TiO2** photocatalysts, is pointed out.

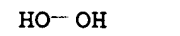
IT **13463-67-7**, uses and miscellaneous
RL: USES (Uses)
(electrodes, **photoreactions** at, behavior of **surface** peroxo species in)

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IT **7722-84-1**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, electrochem., on **titania** in sodium hydroxide soln., photogenerated peroxo-titanium species in relation to)

RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)



CC 72-2 (Electrochemistry)
Section cross-reference(s): **76**

ST **titania photoreaction surface** peroxo specie; water photoelectrolysis **titania** peroxo specie; electrode titaniaperoxo titanium behavior

IT Recombination of electron with hole
(at **titania**, peroxo-titanium species in relation to)

IT Reduction, electrochemical
(of **hydrogen peroxide** on **titania** and peroxotitania photogenerated species on **titania** in alk. solns.)
IT Photoconductivity and Photoconduction
(of **titania** electrode in alk. soln.)
IT Photovoltaic effect
(of **titania** electrode in sodium hydroxide soln.)
IT Electrolytic polarization
(photochem., of **titania** in alk. solns., **surface** peroxo species in relation to)
IT Oxidation, electrochemical
(photochem., of water on **titania** in alk. solns., peroxo species in relation to)
IT 7440-32-6D, peroxo species
RL: USES (Uses)
(electrochem. behavior of photogenerated, at polycryst. **titania** film electrode in alk. solns.)
IT **13463-67-7**, uses and miscellaneous
RL: USES (Uses)
(electrodes, **photoreactions** at, behavior of **surface** peroxo species in)
IT 7782-44-7P, preparation
RL: FORM (Formation, nonpreparative); PREP (Preparation)
(formation of, in photoelectrolysis of water on **titania** in alk. solns., peroxo species in relation to)
IT 7732-18-5, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photoelectrolysis of alk., at **titania**, **surface** peroxo species in relation to)
IT 1310-73-2, properties
RL: PRP (Properties)
(photoelectrolysis of solns. of, at **titania**, **surface** peroxo species in relation to)
IT **7722-84-1**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(reaction of, electrochem., on **titania** in sodium hydroxide soln., photogenerated peroxo-titanium species in relation to)

L49 ANSWER 26 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1986:600336 HCAPLUS
DOCUMENT NUMBER: 105:200336
TITLE: A study of the photocatalytic cleavage of water on noble metal photocatalysis with particular reference to: 1. Hydrogen generation through photoinduced reduction of water and 2. Oxygen generation through photoinduced oxidation of water
AUTHOR(S): Wu, Zhenxiao; Gu, Boe; Zhang, Guangqing; Yin, Huiling; Zhu, Yajie
CORPORATE SOURCE: East China Pet. Inst., Beijing Grad. Sch., Beijing, Peop. Rep. China
SOURCE: Hydrogen Syst., Pap. Int. Symp. (**1986**) , Meeting Date 1985, Volume 1, 217-31. Editor(s): Veziroglu, T. Nejat; Zhu, Yajie; Bao, Deyou. China Acad. Publ.: Beijing, Peop. Rep. China.
CODEN: 55FFA4
DOCUMENT TYPE: Conference

LANGUAGE: English

AB A dependence was studied of the photocatalytic activity of the Pt/**TiO2**/RuO2 system for H generation from H2O, on the conditions of Pt deposition and its concn. on **TiO2** **surface**, and the conditions of doping the catalyst with Nb as donor impurity. Generation of O from H2O was accomplished using RuOx/**TiO2**. Its activity was studied as a function of the catalyst prepn. method and pH of the photolyzed system contg. Ru(bpy)32+ (bpy = 2,2'-bipyridine) and Co(NH3)5Cl2+.

IT **7722-84-1**, uses and miscellaneous
RL: USES (Uses)
(in prepn. of **titanium dioxide**/ruthenium oxide photocatalyst for oxygen generation from water)

RN 7722-84-1 HCAPLUS

CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)

HO—OH

IT **13463-67-7**, uses and miscellaneous
RL: USES (Uses)
(photocatalysts from, for water **photolysis**, study of **activity** of)

RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)

O═Ti═O

CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT Photolysis catalysts
(**titanium dioxide**-based system, for hydrogen and oxygen generation from water, effect of prepn. conditions on activity of)

IT 1313-96-8 21348-59-4
RL: USES (Uses)
(in prepn. of photocatalyst from **titanium dioxide**/ruthenium oxide/titanium doped with niobium, for water photodecompn.)

IT 1336-21-6 **7722-84-1**, uses and miscellaneous
RL: USES (Uses)
(in prepn. of **titanium dioxide**/ruthenium oxide photocatalyst for oxygen generation from water)

IT 22537-41-3, uses and miscellaneous
RL: USES (Uses)
(photocatalyst for water decompn. from platinum/**titanium dioxide**/ruthenium oxide system doped with, effect of doping method on hydrogen generation in)

IT 11113-84-1
RL: USES (Uses)
(photocatalyst from **titanium dioxide** and, for water decompn., effect of prepn. method on hydrogen generation)

IT 7440-06-4, uses and miscellaneous
RL: USES (Uses)
(photocatalyst from **titanium dioxide** contg. ruthenium oxide and, for hydrogen generation from water, effect of prepn. conditions on activity of)

IT 12036-10-1
RL: USES (Uses)
(photocatalysts from **titanium dioxide** contg. platinum and, for hydrogen generation from water, activity of)
IT **13463-67-7**, uses and miscellaneous
RL: USES (Uses)
(photocatalysts from, for water **photolysis**, study of **activity** of)
IT 1910-42-5
RL: USES (Uses)
(photocatalytic decompn. of water in system contg. tris(bipyridine)ruthenium(2+) and EDTA and, activity of platinum/**titanium dioxide**/ruthenium oxide catalyst for)
IT 60-00-4, uses and miscellaneous
RL: USES (Uses)
(photocatalytic decompn. of water in system contg. tris(bipyridine)ruthenium(2+) and Me viologen and, activity of platinum/**titanium dioxide**/ruthenium oxide catalyst for)
IT 7732-18-5, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photocatalytic decompn. of, for hydrogen and oxygen generation, activity of **titanium dioxide** catalyst system for)
IT 15158-62-0
RL: USES (Uses)
(photocatalytic water decompn. in system contg. Me viologen and EDTA and, activity of platinum/**titanium dioxide** /ruthenium dioxide catalyst for)
IT 14970-14-0P
RL: PREP (Preparation)
(photogeneration of oxygen from water in system contg. tris(bipyridine)ruthenium(2+) and, activity of ruthenium oxide/**titanium dioxide** catalyst for)
IT 1333-74-0P, preparation
RL: PREP (Preparation)
(photogeneration of, from water, activity of platinum/**titanium dioxide**/ruthenium dioxide catalyst for)
IT 7782-44-7P, preparation
RL: PREP (Preparation)
(photogeneration of, from water, **titanium dioxide**/ruthenium oxide catalyst for)

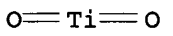
L49 ANSWER 27 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:494804 HCAPLUS
DOCUMENT NUMBER: 103:94804
TITLE: Kinetic approach to the photocurrent transients in water photoelectrolysis at n-**titanium dioxide** electrodes. 1. Analysis of the ratio of the instantaneous to steady-state photocurrent
AUTHOR(S): Salvador, P.
CORPORATE SOURCE: Inst. Catal. Petroleoquim., CSIC, Madrid, 28006, Spain
SOURCE: Journal of Physical Chemistry (**1985**), 89(18), 3863-9
CODEN: JPCHAX; ISSN: 0022-3654
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The transient photocurrent-time behavior obsd. during H2O photoelectrolysis with monochromatic band-gap light at n-**TiO2** single crystals was studied as a function of semiconductor band bending (.vphi.s) and photon flux (Φo). A kinetic model based on the photogeneration of **surface** species, intermediates of the O evolution reaction, allows a quant. explanation of the main transient features. Two parallel mechanisms are involved in this model: (1) a time-dependent cathodic back reaction of photogenerated **surface** intermediates (mainly OHs. radicals and (**H2O2**)s species) with conduction band electrons, opposite to the anodic photocurrent; and (2) a band-bending modulation due to the accumulation of pos. charge at the semiconductor **surface** produced by hole trapping at active OH- **surface** groups. **Surface** recombination via photogenerated OHs. radicals is the domainant reaction at small band bending. In the sequence of **surface** reactions leading to O evolution, hole flux toward the semiconductor-electrolyte interface is the limiting step at low Φo. At high enough **light** intensity the **reaction** is limited by the generation rate of **H2O2** species from photogenerated OHs. radicals. The rate const. of this reaction is estd. to be .apprx.10-11-10-12 cm2/s-1. At steady state the **surface** concn. of photogenerated species (OHs. and (**H2O2**)s) depends on both .vphi.s and Φo. Under monochromatic illumination (λ = 380 nm, Φo = 1015 cm-2 s-1), and for negligible **surface** recombination (high Φs), the **surface** concn. of OHs. and (**H2O2**)s reaches values of the order of 1013 and 1014 cm-2, resp. In the dark after illumination, and in the absence of oxidative electrolyte species other than H2O mols., the lifetime of OHs. radicals is very short (<10-3 s). By contrast, photogenerated (**H2O2**)s can remain stably bound to the **TiO2 surface** coordinated to Ti ions.

IT **13463-67-7**, uses and miscellaneous
RL: USES (Uses)
(electrodes, water photoelectrolysis at n-type, kinetic approach to photocurrent transients in)

RN 13463-67-7 HCAPLUS

CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IT **7722-84-1P**, preparation
RL: PREP (Preparation)
(photogeneration of intermediate of, in water photoelectrolysis at n-type **titanium dioxide** electrodes)

RN 7722-84-1 HCAPLUS

CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)

CC 72-2 (Electrochemistry)
Section cross-reference(s): 67, **74**, **76**

ST water photoelectrolytic **titanium dioxide** photocurrent; kinetics hydroxyl radical recombination; oxygen prodn water photoelectrolysis titanium

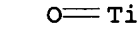
IT Kinetics of recombination
(of hydroxyl radicals in **hydrogen peroxide** formation, water photoelectrolysis at **titanium dioxide** in relation to)
IT Energy level, **surface**
Photoconductivity and Photoconduction
(of **titanium dioxide**, water photoelectrolysis in relation to)
IT Oxidation, electrochemical
(photochem., in oxygen evolution on water on **titanium dioxide**)
IT **13463-67-7**, uses and miscellaneous
RL: USES (Uses)
(electrodes, water photoelectrolysis at n-type, kinetic approach to photocurrent transients in)
IT 7782-44-7P, preparation
RL: PREP (Preparation)
(evolution of, in water photoelectrolysis at n-type **titanium dioxide** electrodes, transient photocurrent in relation to)
IT 7732-18-5, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(photoelectrolysis of, at **titanium dioxide** electrodes, kinetic approach to photocurrent transients in)
IT **7722-84-1P**, preparation
RL: PREP (Preparation)
(photogeneration of intermediate of, in water photoelectrolysis at n-type **titanium dioxide** electrodes)

L49 ANSWER 28 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:476796 HCAPLUS
DOCUMENT NUMBER: 103:76796
TITLE: Activation of semiconductor photocatalysts by chemical processing
AUTHOR(S): Sekine, Tadao; Ueda, Hisashi; Yonemura, Michiko
CORPORATE SOURCE: Natl. Chem. Lab. Ind., Yatabe, 305, Japan
SOURCE: Nippon Kagaku Kaishi (**1985**), (6), 1024-34
CODEN: NKAKB8; ISSN: 0369-4577
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB **Surface** processing of semiconductor materials was carried out to activate them for photocatalysis. There are 2 objectives in the present **surface** activation. One is to make them absorb visible lights and the other is to make them capable of oxidizing H2O under illumination. Expts. were carried out to examine the possibility of a composite material which has both the stability of an oxide and the light absorption capability of a sulfide. Titanium plate, Zr plate, **TiO2**, ZrO2, HfO2, SrTiO3, Sr2TiO4, SrZrO3, Sr3Zr2O7, KTi6O13, and BaTiO3 were processed. The processing consists of 5 cycles of heating in CS2 (800-900°) and in O2 (500-600°). Then Pt or Ni was combined with the product and the photocatalytic activity of the catalyst was measured. X-ray diffraction, reflectance spectra, IR spectra and ESR spectra data were recorded after each of the heating procedure of SrTiO3 and SrZrO3. In the cases of Ti and Zr plate, x-ray diffraction and reflectance spectra were recorded after each heating procedure. The visible light absorption was increased by formation of multiple layers of sulfide and oxide on the **surface** of Ti and Zr plates. The **TiO2** (anatase),

ZrO2, and HfO2 after the processing generated H from a 1 : 1 H2O-iso-PrOH visible light. The SrTiO3, SrZrO3, and related compds. after processing generated H2 and **H2O2** from H2O when illuminated by visible light. The photolysis is due to formation of a new electronic energy band created by the doping of SO2-. The electrons may be excited from this band to the conduction band.

IT **13463-67-7**, uses and miscellaneous
RL: CAT (Catalyst use); USES (Uses)
(catalysts, sulfide-coated, hydrogen prodn.)

RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



CC 67-1 (Catalysis, Reaction Kinetics, and Inorganic Reaction Mechanisms)
Section cross-reference(s): 52, **74**, **76**

IT 1314-23-4, uses and miscellaneous 7440-32-6, uses and miscellaneous 7440-67-7, uses and miscellaneous 12036-39-4 12037-00-2 12047-27-7, uses and miscellaneous 12055-23-1 12056-51-8 12060-59-2 **13463-67-7**, uses and miscellaneous 60492-87-7
RL: CAT (Catalyst use); USES (Uses)
(catalysts, sulfide-coated, hydrogen prodn.)

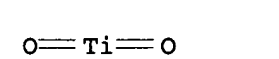
IT 7732-18-5, **reactions**
RL: RCT (Reactant); RACT (Reactant or reagent)
(**photolysis** of, using sulfide-coated semiconductor oxide photocatalysts)

L49 ANSWER 29 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1985:36523 HCAPLUS
DOCUMENT NUMBER: 102:36523
TITLE: Study of the mechanism of water splitting on UV-irradiated anatase-supported rhodium
AUTHOR(S): Munuera, G.; Soria, J.; Conesa, J. C.; Sanz, J.; Gonzalez-Elipe, A. R.; Navio, A.; Lopez-Molina, E. J.; Munoz, A.; Fernandez, A.; Espinos, J. P.
CORPORATE SOURCE: Dep. Quim. Gen., Univ. Sevilla, Seville, Spain
SOURCE: Studies in Surface Science and Catalysis (**1984**), 19(Catal. Energy Scene), 335-46
CODEN: SSCTDM; ISSN: 0167-2991
DOCUMENT TYPE: Journal
LANGUAGE: English

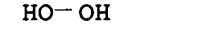
AB Water cleavage induced by UV-irradn. of Rh/**TiO2** samples was studied in gas/solid and liq./solid interfaces. EPR and elec. cond. show an easy transfer of electrons at the metal-**TiO2** interface in the presence of H2, and O2 oxidizes the metal and suppress H2 photogeneration, but not O photoadsorption. Only H2 evolution occurs, in an autocatalytic process, from irradiated suspensions of the sample in 1M NaOH solns. The presence of O2 readily suppress this H2 generation and O2 photouptake is obsd. A mechanism is proposed for the process that involves photochem. generation of H2 and **H2O2** and thermal (dark) decompn. of the latter catalyzed by the metal which is progressively oxidized to Rh2O3.xH2O.

IT **13463-67-7**, uses and miscellaneous
RL: USES (Uses)
(photolysis of water on rhodium supported on, mechanism of

processes in)
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IT **7722-84-1P**, preparation
RL: PREP (Preparation)
(photoprodn. of, in water splitting on UV-irradiated **titanium dioxide**-supported rhodium, mechanism of)
RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)



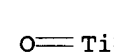
CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 52
ST photolysis water anatase support rhodium; UV water photodecompn rhodium catalyst; **titanium dioxide** rhodium water photolysis; hydrogen photoprodn water splitting
IT Electron exchange
(at rhodium-**titanium dioxide** interface, in water splitting, UV-induced, mechanisms in)
IT Photolysis
(of water, on UV-irradiated **titanium dioxide**-supported rhodium, mechanism of processes in)
IT **Surface**
(processes on rhodium-**titanium dioxide**, water splitting, UV-induced, electron transfer in)
IT Interface
(liq.-solid, water photolysis on **titanium dioxide**-supported rhodium in, mechanism of)
IT **13463-67-7**, uses and miscellaneous
RL: USES (Uses)
(photolysis of water on rhodium supported on, mechanism of processes in)
IT 7440-16-6, uses and miscellaneous
RL: USES (Uses)
(photolysis of water on **titanium dioxide**-supported, mechanism of processes in)
IT 7732-18-5, **reactions**
RL: RCT (Reactant); RACT (Reactant or reagent)
(**photolysis** of, **UV**-induced, on anatase-supported rhodium, mechanism of processes in)
IT 1333-74-0P, preparation **7722-84-1P**, preparation 7782-44-7P, preparation
RL: PREP (Preparation)
(photoprodn. of, in water splitting on UV-irradiated **titanium dioxide**-supported rhodium, mechanism of)

L49 ANSWER 30 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1984:561087 HCAPLUS
DOCUMENT NUMBER: 101:161087

TITLE: Methyl orange as a probe for photooxidation reactions of colloidal **titanium dioxide**
AUTHOR(S): Brown, Graham T.; Darwent, James R.
CORPORATE SOURCE: Birkbeck Coll., Univ. London, London, WC1E 7HX, UK
SOURCE: Journal of Physical Chemistry (**1984**), 88(21), 4955-9
CODEN: JPCHAX; ISSN: 0022-3654
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Unsupported **TiO2** colloids catalyzed the photooxidn. of methyl orange and concomitant redn. of O2. **H2O2** inhibited oxidn. of methyl orange in a manner analogous to noncompetitive enzyme inhibition. A kinetic anal. revealed that 10-4 M **H2O2** intercepted 50% of photogenerated holes (h+) before recombination with e-, whereas methyl orange reacted with **surface** radicals, (TiO·)S. Only 1 in 450 photogenerated h+ led to (TiO·)S and in the absence of **H2O2** charge recombination was the major reaction pathway. Cationic surfactants and cationic polymers (Polydmeama and Merquat 100) increased the rate of methyl orange oxidn.

IT **13463-67-7**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(colloidal, photooxidn. of methyl orange catalyzed by)
RN 13463-67-7 HCAPLUS
CN Titanium oxide (TiO2) (8CI, 9CI) (CA INDEX NAME)



IT **7722-84-1, reactions**
RL: RCT (Reactant); RACT (Reactant or reagent)
(**photolysis** of system contg. methyl orange and colloidal **titanium dioxide** and, mechanism of)
RN 7722-84-1 HCAPLUS
CN Hydrogen peroxide (H2O2) (9CI) (CA INDEX NAME)

CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST methyl orange photooxidn **titanium oxide**
IT Oxidation, photochemical
(of methyl orange, on colloidal **titanium dioxide**, mechanism of)
IT Kinetics of oxidation
(photochem., of methyl orange, on colloidal **titanium dioxide**, **hydrogen peroxide** effect on)
IT 112-02-7 26062-79-3 26161-33-1
RL: USES (Uses)
(colloidal **titanium dioxide** supported by, photooxidn. of methyl orange in system contg.)
IT **13463-67-7**, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(colloidal, photooxidn. of methyl orange catalyzed by)
IT **7722-84-1, reactions**

RL: RCT (Reactant); RACT (Reactant or reagent)
(**photolysis** of system contg. methyl orange and colloidal **titanium dioxide** and, mechanism of)
IT 547-58-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(photooxidn. of, catalyzed by colloidal **titanium dioxide**)
IT 7782-44-7, reactions
RL: RCT (Reactant); RACT (Reactant or reagent)
(redn. of, in photolysis of methyl orange on colloidal **titanium dioxide**)

L49 ANSWER 31 OF 31 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1972:147291 HCAPLUS
DOCUMENT NUMBER: 76:147291
TITLE: Updating a data storage record member
INVENTOR(S): Pfluke, Peter L.
PATENT ASSIGNEE(S): Itek Corp.
SOURCE: U.S., 4 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 3635712	A	19720118	US 1969-803152	196902 28

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PRIORITY APPLN. INFO.: US 1969-803152 A 196902 28

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AB For updating data stored in photoconductive **TiO2**- or ZnO-binder layers, such as Itek RS microfiche (U.S. 3,380,823), the **light-sensitive surface** areas to be cor. are mech. delinated, the image erased and the **surface** dark adapted with **H2O2** vapors, and finally reactivated with aq. AgNO3. New data are then recorded on the erased areas.
IC G03C
INCL 096048000
CC **74** (Radiation Chemistry, Photochemistry, and Photographic Processes)
Section cross-reference(s): 71
ST data storage record updating; **titanium dioxide** photoconductor erasure; zinc oxide photoconductor erasure; photoconductor erasure rerecording

=> d l50 ibib abs hitstr hitind 1-17

Claim 26

L50 ANSWER 1 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:211852 HCAPLUS
DOCUMENT NUMBER: 144:283283
TITLE: Film forming material and preparation of **surface** relief and optically anisotropic structures by irradiating a film of the said

material.
INVENTOR(S): Stumpe, Joachim; Goldenberg, Leonid; Kulikovska, Olga
PATENT ASSIGNEE(S): Fraunhofer-Gesellschaft zur Foerderung der Angewandten Forschung e.V., Germany
SOURCE: PCT Int. Appl., 41 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006024500	A1	20060309	WO 2005-EP9346	20050830
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
EP 1632520	A1	20060308	EP 2004-20997	20040903
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, PL, SK, HR				
PRIORITY APPLN. INFO.:			EP 2004-20997 A	20040903
			EP 2004-29262 A	20041209
			DE 2004-102004040605A	20040821

AB A film forming, **photoactive**, homogeneously mixed material comprising a complex prepd. from (a) ≥1 ionic low mol. wt. **photosensitive** compd. which may undergo a reversible **photoreaction** (such as photoisomerization, photocycloaddn and/or photoinduced rearrangement) or ≥1 **photosensitive** polyelectrolyte ("second polyelectrolyte") carrying residues which may undergo the same **photoreaction**, and (b) ≥1 ("first") polyelectrolyte carrying charges which are opposite to those of the active groups of the **photosensitive** material is used for manuf. non-scattering, optically clear films with light-induced optical anisotropy and with reversible formation of topol. **surface** structures, e.g.

such as **surface** relief gratings (SRG). Thus, mixing 54 mg monosodium salt of 2-hydroxy-5-[(3-nitrophenyl)azo]benzoic acid (Alizarin Yellow GG) in water, adding 40 μL 30% soln. of polyethyleneimine, filtering, desolving the resulting complex in 1 mL THF and casting onto a glass substrate in a close chamber at room temp. gave after 5 h drying a **photoactive** 2 μm film. Irradn. of this film with the interference pattern formed by two linearly polarized beams (488 nm) with angle between beams 12° resulted in a period 2.3μm. The induced **surface** relief is exhibiting a SRG with amplitude ca. 350 nm.

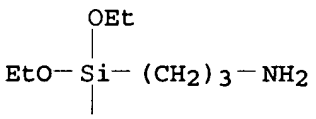
IT **29159-37-3DP**, complex with disodium salt of 2,2'-(1,2-ethenediyl)bis[5-[(4-hydroxyphenyl)azo]-benzenesulfonic acid
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(film forming, **photoactive** material comprising a complex prepd. from ionic low mol. wt. **photosensitive** compd. which may undergo a reversible **photoreaction** and an opposite charged polyelectrolyte)

RN 29159-37-3 HCAPLUS

CN 1-Propanamine, 3-(triethoxysilyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 919-30-2
CMF C9 H23 N O3 Si



IC ICM C08L101-02
ICS G02B005-18; C08L079-00; H01L031-02

CC 74-9 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST film forming **photoactive** homogeneously mixed material; complex ionic **photosensitive** compd polyelectrolyte film forming material

IT Polysiloxanes, properties
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(charged, polyelectrolyte, complex with **photosensitive** compds.; film forming, **photoactive** material comprising a complex prepd. from **photosensitive** compd and an opposite charged polyelectrolyte)

IT Isomerization
(cis-trans, photochem., of azobenzene derivs.; film forming, **photoactive** material comprising a complex prepd. from ionic low mol. wt. **photosensitive** compd. which may undergo a reversible **photoreaction** and an opposite charged polyelectrolyte)

IT Polyelectrolytes
(complex with **photosensitive** compds.; film forming, **photoactive** material comprising a complex prepd. from

ionic low mol. wt. **photosensitive** compd. which may undergo a reversible **photoreaction** and an opposite charged polyelectrolyte)

IT Anisotropic materials
Coating materials
Electrooptical imaging devices
Light-sensitive materials
Optical memory devices
(film forming, **photoactive** material comprising a complex prepd. from ionic low mol. wt. **photosensitive** compd. which may undergo a reversible **photoreaction** and an opposite charged polyelectrolyte)

IT 1562-93-2DP, Azobenzene-4-carboxylic acid, complex with poly(diallyldimethylaammonium chloride) 2491-74-9DP, 4-(Dimethylamino)-4'-nitroazobenzene, complex with polyacrylic acid sodium salt 9003-04-7DP, Polyacrylic acid sodium salt, complex with 4-(Dimethylamino)-4'-nitroazobenzene 26062-79-3DP, Poly(diallyldimethylammonium chloride), complex with azobenzene-4-carboxylic acid **29159-37-3DP**, complex with disodium salt of 2,2'-(1,2-ethenediyl)bis[5-[(4-hydroxyphenyl)azo]-benzenesulfonic acid 89875-89-8DP, Poly[1-[4-(3-carboxy-4-hydroxyphenylazo)benzenesulfonamido]-1,2-ethaned iyl sodium salt], complex with polyethyleneimine
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(film forming, **photoactive** material comprising a complex prepd. from ionic low mol. wt. **photosensitive** compd. which may undergo a reversible **photoreaction** and an opposite charged polyelectrolyte)

IT 584-42-9DP, Alizarin Yellow GG, complex with polyethyleneimine 3051-11-4DP, Brilliant yellow, complex with polyethyleneimine 9002-98-6DP, complex with 2-hydroxy-5-[(3-nitrophenyl)azo]benzoic acid and other ionic **photosensitive** compds
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(film forming, **photoactive** material; film forming, **photoactive** material comprising a complex prepd. from ionic low mol. wt. **photosensitive** compd. which may undergo a reversible **photoreaction** and an opposite charged polyelectrolyte)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 2 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:178042 HCAPLUS
DOCUMENT NUMBER: 144:414276
TITLE: Application of spray techniques for new photocatalytic gradient coatings on plastics
AUTHOR(S): Schmidt, H.; Naumann, M.; Mueller, T. S.; Akarsu, M.
CORPORATE SOURCE: Leibniz-Institut fuer Neue Materialien (INM), Chemistry and Technology of Materials-Catalysis, Saarbruecken, Germany
SOURCE: Thin Solid Films (2006), 502(1-2), 132-137
CODEN: THSFAP; ISSN: 0040-6090
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Transparent coating systems applicable on plastics **surfaces**

by a spray technique are presented. The coatings are based on highly photocatalytically active nanoscaled titania powders, **surface** modified with silanes contg. org. or fluoro-org. side chains. The modification allows for the introduction of the particles in org. inorg. hybrid NANOMER coating systems. In the wet film-due to the evapn. of the solvents-a decompatibilisation of the coated particles to the matrix results in a self-organizing gradient layer formation with an up-concn. of the active particles at the interface layer between coating and air. After activation by irradn. with artificial or natural **UV-light**, highly **active** transparent photocatalytic coatings for a great variety of materials are obtained.

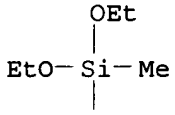
IT **88029-70-3P**, Tetraethoxysilane-methyltriethoxysilane copolymer
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(application of spray techniques for new photocatalytic gradient coatings on plastics)

RN 88029-70-3 HCAPLUS

CN Silicic acid (H4SiO4), tetraethyl ester, polymer with triethoxymethylsilane (9CI) (CA INDEX NAME)

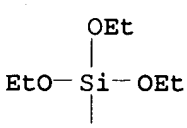
CM 1

CRN 2031-67-6
CMF C7 H18 O3 Si



CM 2

CRN 78-10-4
CMF C8 H20 O4 Si



CC 42-2 (Coatings, Inks, and Related Products)

IT **Coating process**
(spray; application of spray techniques for new photocatalytic gradient coatings on plastics)

IT **88029-70-3P**, Tetraethoxysilane-methyltriethoxysilane copolymer
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(application of spray techniques for new photocatalytic gradient coatings on plastics)

REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE

FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L50 ANSWER 3 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:1075869 HCAPLUS
DOCUMENT NUMBER: 143:368838
TITLE: Active energy ray-curable coating compositions with good abrasion resistance, transparency, antistatic property for molded articles
INVENTOR(S): Kondo, Satoshi
PATENT ASSIGNEE(S): Asahi Glass Company, Limited, Japan
SOURCE: PCT Int. Appl., 36 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005092991	A1	20051006	WO 2005-JP5435	200503 24

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: JP 2004-91995 A 200403 26

AB Title compns. comprise (A) (meth)acryloylated compd. mixt. contg. 22-62% (meth)acryloylated copolymer obtained by reaction of radically polymerizable monomer having a specified amt. of quaternary ammonium salt group, hydroxylated radically polymerizable monomer, and radically polymerizable monomer of lactone ring-opening addn. structure, and (B) colloidal silica. Thus, 30.00 g 2-methacryloyloxyethyltrimethylammonium chloride and 64.74 g Placcel FA 2D were polymd. at 65° for 6 h, 21.00 g 2-methacryloyloxyethyl isocyanate was added therein and reacted in the presence of 2,6-di-tert-butylp-cresol at room temp. for 12 h to give 40%-solids a copolymer soln. with wt. av. mol. wt. 7000, 30.88 g of which was mixed with 72%-solids a methacryloyl-terminated polysiloxane-polycaprolactone block copolymer soln. 0.20, 70%-solids a methacryloyl-end blocked trifluoromethoxy perflruoropolyoxyalkylene soln. 0.20, pentaerythritol triacrylate 8.24, dipentaerythritol hexaacrylate 32.94, 33.3%-solids silsesquioxane-coated colloid silica 76.38, cyclohexanone 20.14, and 2-propanol 27.72 g, applied on a polycarbonate sheet, dried at 90° for 1 min, and irradiated with a high pressure mercury lamp to give a test piece, showing good antistatic and antifouling

property, transparency, abrasion resistance, and **surface** smoothness.

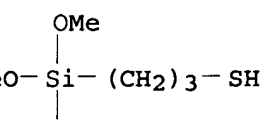
IT **29295-80-5**, 3-Mercaptopropyltrimethoxysilane homopolymer
RL: MOA (Modifier or additive use); USES (Uses)
(silica coating material; active energy ray-curable coating compns. with good abrasion resistance, transparency, antistatic property for molded articles)

RN 29295-80-5 HCAPLUS

CN 1-Propanethiol, 3-(trimethoxysilyl)-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 4420-74-0
CMF C6 H16 O3 S Si



IC ICM C09D004-00
ICS C08F290-04; C09D005-00; C09D007-12; C09D155-00; C09D175-14; C09K003-16

CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 38

IT **Coating materials**
(abrasion-resistant, **UV**-curable; **active** energy ray-curable coating compns. with good abrasion resistance, transparency, antistatic property for molded articles)

IT **Coating materials**
(antifouling; active energy ray-curable coating compns. with good abrasion resistance, transparency, antistatic property for molded articles)

IT **Coating materials**
(antistatic, **UV**-curable; **active** energy ray-curable coating compns. with good abrasion resistance, transparency, antistatic property for molded articles)

IT **Coating materials**
(antistatic, transparent; active energy ray-curable coating compns. with good abrasion resistance, transparency, antistatic property for molded articles)

IT **29295-80-5**, 3-Mercaptopropyltrimethoxysilane homopolymer
52004-97-4, 3-Methacryloyloxypropyltrimethoxysilane homopolymer
159338-14-4 167427-18-1
RL: MOA (Modifier or additive use); USES (Uses)
(silica coating material; active energy ray-curable coating compns. with good abrasion resistance, transparency, antistatic property for molded articles)

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 4 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:182412 HCAPLUS
DOCUMENT NUMBER: 142:263245
TITLE: **Radiation-activated,**

self-cleaning titanium dioxide coatings
INVENTOR(S): Cai, Ru Xiong
PATENT ASSIGNEE(S): Singapore
SOURCE: U.S. Pat. Appl. Publ., 15 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2005049158	A1	20050303	US 2004-927830	20040827
PRIORITY APPLN. INFO.:			US 2003-498605P P	20030829

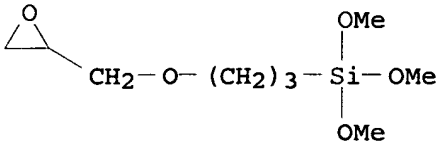
AB Compns. for manuf. of undercoatings with improved inertness to photocatalytic **activity** of **radiation-activated**, self-cleaning TiO2 coatings contain mixts. of Si(OR1)4 (R1 = hydrolyzable group) (I), R2xSiOR1(4-x) (R2 = epoxy group, x = 0-3) (II), a silica filler, and an org. acid for promoting hydrolysis and crosslinking of I and II. A coating on the **surface** is formed by depositing the mixt. on the **surface** to form an under layer and depositing an outer layer comprising primarily a **radiation activated** self-cleaning material on the under layer.

IT **141087-51-6P**, 3-(Glycidyloxy)propyltrimethoxysilane-tetraethyl silicate copolymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**radiation-activated**, self-cleaning titanium dioxide coatings with silica-filled silicate-siloxane undercoatings)

RN 141087-51-6 HCAPLUS
CN Silicic acid (H4SiO4), tetraethyl ester, polymer with trimethoxy[3-(oxiranylmethoxy)propyl]silane (9CI) (CA INDEX NAME)

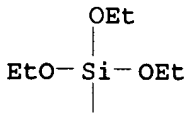
CM 1

CRN 2530-83-8
CMF C9 H20 O5 Si



CM 2

CRN 78-10-4
CMF C8 H20 O4 Si



IC ICM C11D017-00
INCL 510197000; 510511000
CC 42-10 (Coatings, Inks, and Related Products)
ST **radiation activated** self cleaning titania coating silicate epoxysiloxane undercoating
IT Carboxylic acids, uses
RL: CAT (Catalyst use); USES (Uses)
(hydrolytic sol-gel polymn. catalyst; **radiation-activated**, self-cleaning titanium dioxide coatings with silica-filled silicate-siloxane undercoatings)
IT Polymerization catalysts
(hydrolytic, carboxylic acids; **radiation-activated**, self-cleaning titanium dioxide coatings with silica-filled silicate-siloxane undercoatings)
IT Transition metals, uses
RL: CAT (Catalyst use); USES (Uses)
(optional **radiation-activation** catalyst; **radiation-activated**, self-cleaning titanium dioxide coatings with silica-filled silicate-siloxane undercoatings)
IT Catalysts
(**radiation-activation**, transition metals; **radiation-activated**, self-cleaning titanium dioxide coatings with silica-filled silicate-siloxane undercoatings)
IT **Coating materials**
(self-cleaning; **radiation-activated**, self-cleaning titanium dioxide coatings with silica-filled silicate-siloxane undercoatings)
IT Polysiloxanes, uses
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(silicate-; **radiation-activated**, self-cleaning titanium dioxide coatings with silica-filled silicate-siloxane undercoatings)
IT 13463-67-7, Titanium oxide (TiO2), uses
RL: TEM (Technical or engineered material use); USES (Uses)
(anatase-type; **radiation-activated**, self-cleaning titanium dioxide coatings with silica-filled silicate-siloxane undercoatings)
IT 7631-86-9, Ludox TM 40, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(colloidal; **radiation-activated**, self-cleaning titanium dioxide coatings with silica-filled silicate-siloxane undercoatings)
IT 97-65-4, Itaconic acid, uses
RL: CAT (Catalyst use); USES (Uses)
(hydrolytic sol-gel polymn. catalyst; **radiation-activated**, self-cleaning titanium dioxide coatings with

silica-filled silicate-siloxane undercoatings)

IT 7439-89-6, Iron, uses 7440-02-0, Nickel, uses 7440-05-3, Palladium, uses 7440-06-4, Platinum, uses 7440-16-6, Rhodium, uses 7440-18-8, Ruthenium, uses 7440-22-4, Silver, uses 7440-48-4, Cobalt, uses 7440-50-8, Copper, uses 7440-57-5, Gold, uses 7440-62-2, Vanadium, uses 7440-66-6, Zinc, uses
RL: CAT (Catalyst use); USES (Uses)
(optional **radiation-activation** catalyst; **radiation-activated**, self-cleaning titanium dioxide coatings with silica-filled silicate-siloxane undercoatings)

IT **141087-51-6P**, 3-(Glycidyloxy)propyltrimethoxysilane-tetraethyl silicate copolymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**radiation-activated**, self-cleaning titanium dioxide coatings with silica-filled silicate-siloxane undercoatings)

L50 ANSWER 5 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:534004 HCAPLUS
DOCUMENT NUMBER: 141:90123
TITLE: Radiation curing silicone rubber composition, adhesive silicone elastomer film formed and semiconductor device produced therewith and method
INVENTOR(S): Kashiwagi, Tsutomu; Makikawa, Shinji; Sutou, Toshiyuki; Shiobara, Toshio
PATENT ASSIGNEE(S): Shin-Etsu Chemical Co., Ltd., Japan
SOURCE: U.S. Pat. Appl. Publ., 22 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 2004127613	A1	20040701	US 2003-732519		20031211
JP 2005023291	A2	20050127	JP 2003-409490		20031208
PRIORITY APPLN. INFO.:			JP 2002-359974	A	20021211
			JP 2003-167519	A	20030612

AB The radiation curable silicone rubber compn. includes: (a) 5 to 100 parts by wt. of an organohydrogenpolysiloxane contg. at least one group selected from the group consisting of acryloyl groups and methacryloyl groups, and at least one hydrosilyl group within each mol.; (b) 95 to 0 parts by wt. of a fluid organopolysiloxane with at least two groups which are each selected from the group consisting

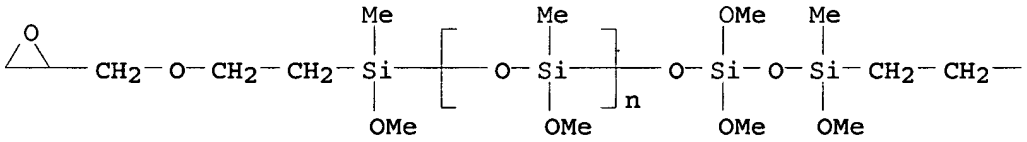
of acryloyl groups and methacryloyl groups within each mol., and with no hydrosilyl groups, (wherein, a combined wt. of said component (a) and said component (b) is 100 parts by wt.); (c) 0 to 30 parts by wt. of at least one compd. selected from the group consisting of alkoxysilanes, **partial hydrolysis** -condensation products of alkoxysilanes, organosilane-modified isocyanurates and organosiloxane-modified isocyanurates; (d) an effective quantity of a **radiation sensitizer**; and (e) an effective quantity of a platinum group metal-based catalyst. The compn. is of low elasticity, while also providing excellent heat resistance, adhesion, and workability. The compn. is useful for the bonding of substrates esp. in semiconductor devices, wherein a structural body is prepd. in which two substrates are bonded via a cured layer formed from the compn.

IT **585541-05-5DP**, polymers with (meth)acryloyloxy contg. polysiloxane
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(radiation curing silicone rubber compn., adhesive silicone elastomer film formed and semiconductor device produced therewith and method)

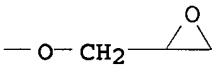
RN 585541-05-5 HCAPLUS

CN Poly[oxy(methoxymethylsilylene)], α-[methoxymethyl[2-(oxiranylmethoxy)ethyl]silyl]-ω-[[1,1,3-trimethoxy-3-methyl-3-[2-(oxiranylmethoxy)ethyl]disiloxanyl]oxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM C08K005-24
INCL 524261000
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 39, 76

IT 681-84-5DP, Tetramethoxysilane, **partial hydrolysis** -condensation product, polymers with (meth)acryloyloxy contg. polysiloxane 26903-80-0DP, polymers with (meth)acryloyloxy contg. polysiloxane 36928-28-6DP, Octamethylcyclotetrasiloxane-1,3,5,7-tetramethylcyclotetrasiloxane copolymer, mono- or di-acryloyloxyalkyldimethylsilyl-terminated, polymers with polysiloxane and (meth)acryloyloxy contg. polysiloxane **585541-05-5DP**, polymers with (meth)acryloyloxy contg. polysiloxane
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(radiation curing silicone rubber compn., adhesive silicone elastomer film formed and semiconductor device produced therewith

and method)

L50 ANSWER 6 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:412668 HCAPLUS
DOCUMENT NUMBER: 140:431503
TITLE: Demonstration kit and method for enhancing and/or demonstrating **photoactive** properties
INVENTOR(S): Boykin, Cheri M.; Lin, Chia-Cheng
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 10 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004096774	A1	20040520	US 2003-657350	20030908
PRIORITY APPLN. INFO.:			US 2002-411796P P	20020918

AB A method is provided for simulating and/or demonstrating and/or enhancing **photoactive** properties, such as hydrophilicity, of a surface, such as a **photoactive** surface. One embodiment includes providing a **photoactive** surface and applying a peroxide-contg. material, such as an aq. hydrogen peroxide soln., over at least a portion of the surface. An optional resinous layer, such as an at least partly hydrolyzed **polymethoxysiloxane** layer, can be applied over the surface. A kit to practice the method and an article made using the method are also provided.
IC ICM G03C001-76
ICS G03F007-09
INCL 430273100; 430270100
CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST demonstration kit **photoactive** property **polymethoxysiloxane**
IT Hydrophilicity
Surface treatment
(demonstration kit and method for enhancing and/or demonstrating **photoactive** properties)
IT Chemicals
(**photoactive**; demonstration kit and method for enhancing and/or demonstrating **photoactive** properties)
IT 7722-84-1, Hydrogen peroxide, uses 690957-45-0, MKC Silicate MS 1200
RL: TEM (Technical or engineered material use); USES (Uses)
(demonstration kit and method for enhancing and/or demonstrating **photoactive** properties)

L50 ANSWER 7 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:673939 HCAPLUS
DOCUMENT NUMBER: 139:198517

TITLE: Radiation curable silicone rubber compositions and adhesive silicone elastomer films
INVENTOR(S): Kashiwagi, Tsutomu; Shiohara, Toshio
PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
JP 2003238808	A2	20030827	JP 2002-38609		20020215
US 2003190484	A1	20031009	US 2003-366357		20030214
US 6949294	B2	20050927			
PRIORITY APPLN. INFO.:			JP 2002-38609	A	20020215
			JP 2002-38610	A	20020215

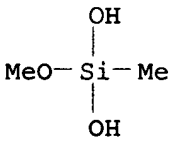
AB Title compns. comprise (A) organo hydrogen polysiloxanes having ≥1 group selected from acryloyl and methacryloyl and ≥1 hydrosilyl group 5-100, (B) oily polysiloxanes having ≥2 groups selected from acryloyl and methacryloyl but having not silyl groups 0-95, (C) ≥1 compd. selected from alkoxysilanes, **partially hydrolyzed** alkoxysilanes, organo silane-modified isocyanurates, and organo siloxane-modified isocyanurates 0.1-30 parts (based on 100 parts of A + B), and (D) **radiation sensitizers.** Thus, methacryloyl-contg. polysiloxane 100, acryloyl-contg. methylhydrogen polysiloxane 20, **partially hydrolyzed** tetramethoxysilane 3, and 2-hydroxy-2-methyl-1-phenylpropan-1-one 2 parts was cast and cured with a mercury lamp give an adhesive film with hardness (JIS K 630) 50, which was used for adhesion of each set of aluminum, silicon wafer, polyimide film, glass, or polycarbonate substrates, showing good shear adhesion.

IT **173027-51-5D**, epoxy group-terminated **585541-05-5**
RL: MOA (Modifier or additive use); USES (Uses)
(radiation curable silicone rubber compns. for adhesive silicone elastomer films)

RN 173027-51-5 HCAPLUS
CN Silanediol, methoxymethyl-, homopolymer (9CI) (CA INDEX NAME)

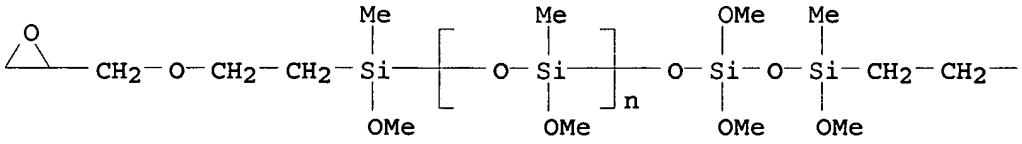
CM 1

CRN 151103-16-1
CMF C2 H8 O3 Si

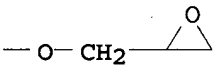


RN 585541-05-5 HCAPLUS
CN Poly[oxy(methoxymethylsilylene)], α-[methoxymethyl[2-(oxiranylmethoxy)ethyl]silyl]-ω-[[1,1,3-trimethoxy-3-methyl-3-[2-(oxiranylmethoxy)ethyl]disiloxanyl]oxy]- (9CI) (CA INDEX NAME)

PAGE 1-A



PAGE 1-B



IC ICM C08L083-05
ICS C08F299-08; C08K005-5415; C08K005-544; C08L083-07; C09J007-00; C09J183-05; C09J183-07; H01L021-52
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 39
IT 12002-26-5, Tetramethoxysilane homopolymer 26903-80-0
173027-51-5D, epoxy group-terminated **585541-05-5**
RL: MOA (Modifier or additive use); USES (Uses)
(radiation curable silicone rubber compns. for adhesive silicone elastomer films)

L50 ANSWER 8 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:901489 HCAPLUS
DOCUMENT NUMBER: 137:390868
TITLE: Optical films having layers with low refractive index and their manufacture
INVENTOR(S): Yoshihara, Toshio
PATENT ASSIGNEE(S): Dai Nippon Printing Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002341106	A2	20021127	JP 2001-144280	200105

15

PRIORITY APPLN. INFO.: JP 2001-144280

200105
15

AB The film comprises a transparent substrate and a layer having low refractive index, formed directly or via an interlayer, on the substrate. The low refractive index layer comprises H bond-formable radiation curable monomers and/or oligomers and (**partial**) **hydrolyzate** of ≥2 of RmSi(OR1)n (R = C1-10 alkyl, vinyl, (meth)acryloyl, epoxy, amido, sulfonyl, hydroxy, carboxyl, etc.; R1 = C1-10 alkyl; m + n = 4) and at least its surface is free of the monomers and/or oligomers and are porous. Manuf. of the layers including formation of a hardened layer followed by extractive removal of un-hardened monomers and/or oligomers and heating is also claimed. The optical films may be antireflective films.

IT **11099-06-2P**, Tetraethoxysilane homopolymer
141087-51-6P, γ-Glycidoxypropyltrimethoxysilane-tetraethoxysilane copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(optical films having polysiloxane-**photosensitive** polymer layers having low refractive index)

RN 11099-06-2 HCAPLUS
CN Silicic acid, ethyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 1343-98-2
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

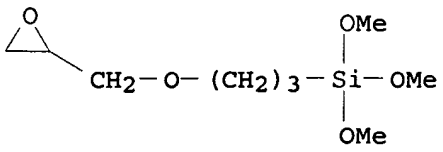
CRN 64-17-5
CMF C2 H6 O

H_3C-CH_2-OH

RN 141087-51-6 HCAPLUS
CN Silicic acid (H4SiO4), tetraethyl ester, polymer with trimethoxy[3-(oxiranylmethoxy)propyl]silane (9CI) (CA INDEX NAME)

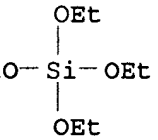
CM 1

CRN 2530-83-8
CMF C9 H20 O5 Si



CM 2

CRN 78-10-4
CMF C8 H20 O4 Si



IC ICM G02B001-11
ICS B05D001-36; B05D007-24; B32B007-02; B32B027-00; B32B027-16; G09F009-00
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 38, 57
ST antireflective film polysiloxane **photosensitive** polymer; porous surface optical film low refractive index
IT Porous materials
(films, surfaces; optical films having polysiloxane-**photosensitive** polymer layers having low refractive index)
IT Antireflective films
Hybrid organic-inorganic materials
Interpenetrating polymer networks
Optical films
(optical films having polysiloxane-**photosensitive** polymer layers having low refractive index)
IT Polysiloxanes, uses
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(optical films having polysiloxane-**photosensitive** polymer layers having low refractive index)
IT Films
(porous, surfaces; optical films having polysiloxane-**photosensitive** polymer layers having low refractive index)
IT **11099-06-2P**, Tetraethoxysilane homopolymer 27775-58-2P, Pentaerythritol triacrylate homopolymer **141087-51-6P**, γ-Glycidoxypropyltrimethoxysilane-tetraethoxysilane copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(optical films having polysiloxane-**photosensitive** polymer layers having low refractive index)

L50 ANSWER 9 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:345203 HCAPLUS
DOCUMENT NUMBER: 136:348080
TITLE: Anti-glare and anti-reflection film and polarizing plate
INVENTOR(S): Obayashi, Tatsuhiko; Sotozono, Hirohisa
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent

LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002131507	A2	20020509	JP 2000-324152	20001024

PRIORITY APPLN. INFO.: JP 2000-324152 20001024

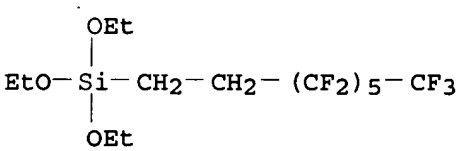
AB Title film comprises a high refractive index (1.57 - 2.50) layer with av. particle diam. 1.0 - 10.0 um and a low refractive index (1.30 - 1.43) layer with ≥1 F-contg. Si-compd. prepd. by a mixt. of **hydrolysis** products and **partial** condensated compns. of (Rf1)aR1bSiXc or X3SiRf2SiX3, and R3aSiX4-a [Rf1 = F-contg. C1-20 alkyl with ≥1 ether or ester bonds; Rf2 = ≥1 F-contg. divalent linkage optionally with ether or ester bonds; R1 = C1-10 alkyl; X = alkoxy, halo, or R2CO2 (R2 = H or C1-10 alkyl); R3 = C1-20 alkyl; a + b + c = 4; a, c = 1 - 3; b = 0 - 2; d = 0 - 3]. The optical film shows haze 3.0 - 20.0%, and the av. reflectivity at 450 - 650 nm is < 1.8%.

IT **220524-99-2 404575-06-0 418253-06-2**
RL: DEV (Device component use); USES (Uses)
(anti-glare and anti-reflection film and polarizing plate)

RN 220524-99-2 HCAPLUS
CN Silicic acid (H4SiO4), tetraethyl ester, polymer with triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)silane (9CI) (CA INDEX NAME)

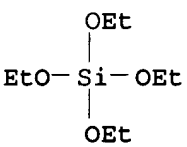
CM 1

CRN 51851-37-7
CMF C14 H19 F13 O3 Si



CM 2

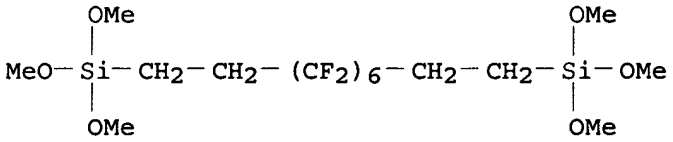
CRN 78-10-4
CMF C8 H20 O4 Si



RN 404575-06-0 HCAPLUS
CN Silicic acid (H4SiO4), tetraethyl ester, polymer with 6,6,7,7,8,8,9,9,10,10,11,11-dodecafluoro-3,3,14,14-tetramethoxy-2,15-dioxa-3,14-disilahexadecane (9CI) (CA INDEX NAME)

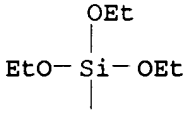
CM 1

CRN 94403-04-0
CMF C16 H26 F12 O6 Si2



CM 2

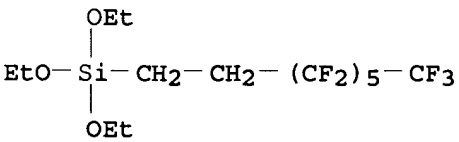
CRN 78-10-4
CMF C8 H20 O4 Si



RN 418253-06-2 HCAPLUS
CN Silicic acid (H4SiO4), tetraethyl ester, polymer with triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)silane, trimethoxy[3-(oxiranylmethoxy)propyl]silane and 3-(trimethoxysilyl)-1-propanamine (9CI) (CA INDEX NAME)

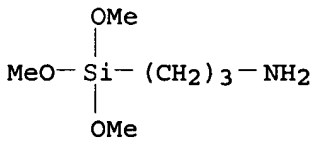
CM 1

CRN 51851-37-7
CMF C14 H19 F13 O3 Si



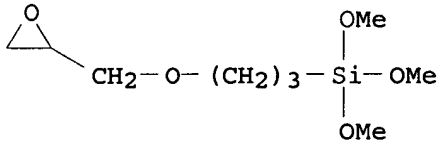
CM 2

CRN 13822-56-5
CMF C6 H17 N O3 Si



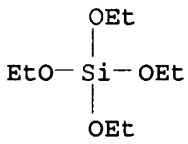
CM 3

CRN 2530-83-8
CMF C9 H20 O5 Si



CM 4

CRN 78-10-4
CMF C8 H20 O4 Si



IC ICM G02B001-11
ICS B32B007-02; B32B027-00; C09K003-00; G02B001-10; G02B005-02; G02B005-30; G02F001-1335
CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): 42
IT 7631-86-9, Silica, uses 29570-58-9, DPHA **220524-99-2** 355137-65-4, SX-200H 370884-29-0, JSR KZ-7991 399510-23-7, DPHA-MPSMA copolymer **404575-06-0 418253-06-2**
RL: DEV (Device component use); USES (Uses)
(anti-glare and anti-reflection film and polarizing plate)
IT 82799-44-8, Kayacure DETX
RL: CAT (Catalyst use); USES (Uses)
(**photosensitizer**; anti-glare and anti-reflection film and polarizing plate)

L50 ANSWER 10 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:228238 HCAPLUS
DOCUMENT NUMBER: 136:267329
TITLE: Titania photocatalyst-containing coatings and their manufacture
INVENTOR(S): Irie, Toshio; Sawano, Shingo; Okita, Kazumasa
PATENT ASSIGNEE(S): Okitsumo K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.

CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002085977	A2	20020326	JP 2000-276941	20000912

PRIORITY APPLN. INFO.: JP 2000-276941 20000912

AB Supports having polysiloxane coatings contg. TiO2 particles and having 40-95% of the alkyl groups, which is directly bonded to Si, being substituted with O or OH at the coating **surface** is claimed. Precursors for the coatings, contg. TiO2 particles coated with silsesquioxane, are also claimed. The coatings are manufd. by prepn. of a polysiloxane-colloidal silica dispersion, obtained by hydrolysis of alkyltrialkoxysilane-colloidal silica dispersion by addn. of water and/or alc., addn. of TiO2 to the dispersion, application of the dispersion on a support, and irradn. of the coating with **UV** for **activation** of Ti and for substitution of alkyl groups with O or OH. The coatings are resistant to erosion and are suitable for outdoor use, e.g. outer walls for buildings, etc.

IT **177860-71-8P**, Methyltrimethoxysilane-silica copolymer
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(erosion-resistant polysiloxane coatings contg. photocatalytic TiO2)

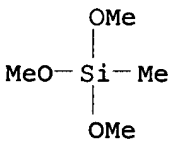
RN 177860-71-8 HCAPLUS
CN Silane, trimethoxymethyl-, polymer with silica (9CI) (CA INDEX NAME)

CM 1

CRN 7631-86-9
CMF O2 Si

CM 2

CRN 1185-55-3
CMF C4 H12 O3 Si



IC ICM B01J035-02
ICS A61L009-00; A61L009-22; B01D053-86; C09D001-00; C09D005-16; C09D183-04
CC 59-6 (Air Pollution and Industrial Hygiene)
IT **Coating materials**
(erosion-resistant; erosion-resistant polysiloxane coatings contg. photocatalytic TiO2)
IT **177860-71-8P**, Methyltrimethoxysilane-silica copolymer
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(erosion-resistant polysiloxane coatings contg. photocatalytic TiO2)

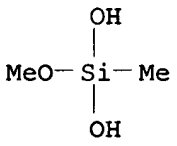
L50 ANSWER 11 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:469355 HCAPLUS
DOCUMENT NUMBER: 135:68621
TITLE: Heat-developable silver halide **photosensitive** material and its development
INVENTOR(S): Hanyu, Takeshi; Usagawa, Yasushi
PATENT ASSIGNEE(S): Konica Co., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 46 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001174950	A2	20010629	JP 1999-357497	19991216
PRIORITY APPLN. INFO.:			JP 1999-357497	19991216

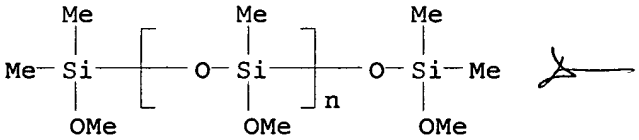
OTHER SOURCE(S): MARPAT 135:68621
AB In the title material having a **photosensitive** layer and a protective layer contg. a matting agent, the protective layer also contains a **surface** modifier represented by R1SiMeMeO(SiR2MeO)m(SiR3MeO)nSiR4MeMe [R1-4 = (substituted) alkyl, alkoxy, OH, arom. group, heterocyclic group; m, n = 0-100; m = n ≠ 0]. The material is developed by using a heat roller comprising silicone rubber contg. metal oxide. The material has high scratch resistance and the roller has high **surface** smoothness and soiling resistance. Images having high storage stability under humid conditions can be formed without color remaining or stain.
IT **173027-51-5D**, Methoxymethylsilanediol homopolymer, methoxydimethylsilyl-terminated **345966-37-2**
RL: MOA (Modifier or additive use); USES (Uses)
(heat-developable silver halide **photosensitive** material contg. polysiloxane **surface** modifier in protective layer for high scratch and soiling resistance)
RN 173027-51-5 HCAPLUS
CN Silanediol, methoxymethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 151103-16-1
CMF C2 H8 O3 Si



RN 345966-37-2 HCAPLUS
CN Poly[oxy(methoxymethylsilylene)], α-(methoxydimethylsilyl)-ω-[(methoxydimethylsilyl)oxy]- (9CI) (CA INDEX NAME)



IC ICM G03C001-76
ICS G03C001-498
CC 74-7 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST polysiloxane **surface** modifier protective heat developable silver halide **photosensitive**; scratch soiling resistance heat developable silver halide **photosensitive**; silicone rubber metal oxide roller heat development silver halide
IT **Coating materials**
(antisoiling; heat-developable silver halide **photosensitive** material contg. binder cured with epoxy compd. and hydrazide for high scratch and soiling resistance)
IT Silicone rubber, uses
RL: NUU (Other use, unclassified); USES (Uses)
(heat roller; heat-developable silver halide **photosensitive** material contg. binder cured with epoxy compd. and hydrazide for high scratch and soiling resistance)
IT Photothermographic copying
(heat-developable silver halide **photosensitive** material contg. binder cured with epoxy compd. and hydrazide for high scratch and soiling resistance)
IT Polysiloxanes, uses
RL: MOA (Modifier or additive use); USES (Uses)
(heat-developable silver halide **photosensitive** material contg. binder cured with epoxy compd. and hydrazide for high scratch and soiling resistance)
IT **Coating materials**
(scratch-resistant; heat-developable silver halide **photosensitive** material contg. binder cured with epoxy compd. and hydrazide for high scratch and soiling resistance)
IT 156309-05-6 156309-05-6D, dimethylsilyl terminated 745829-86-1 745829-86-1D, dimethylsilyl terminated
RL: MOA (Modifier or additive use); USES (Uses)
(diblock; heat-developable silver halide **photosensitive**

material contg. polysiloxane **surface** modifier in protective layer for high scratch and soiling resistance)

IT 1317-60-8, Hematite, uses
RL: NUU (Other use, unclassified); USES (Uses)
(heat roller contg.; heat-developable silver halide **photosensitive** material contg. binder cured with epoxy compd. and hydrazide for high scratch and soiling resistance)

IT 1309-38-2, Magnetite, uses 1344-28-1, Alumina, uses 7631-86-9, Silica, uses
RL: NUU (Other use, unclassified); USES (Uses)
(heat roller contg.; heat-developable silver halide **photosensitive** material contg. polysiloxane **surface** modifier in protective layer for high scratch and soiling resistance)

IT 31900-57-9D, Dimethylsilanediol homopolymer, trimethylsilyl-terminated 42557-10-8, Dimethylsilanediol homopolymer, sru, trimethylsilyl-terminated 155940-31-1D, Ethylmethylsilanediol homopolymer, ethyldimethylsilyl-terminated **173027-51-5D**, Methoxymethylsilanediol homopolymer, methoxydimethylsilyl-terminated 345966-35-0D, trimethylsilyl terminated 345966-36-1 **345966-37-2** 345969-31-5D, dimethylsilyl terminated
RL: MOA (Modifier or additive use); USES (Uses)
(heat-developable silver halide **photosensitive** material contg. polysiloxane **surface** modifier in protective layer for high scratch and soiling resistance)

L50 ANSWER 12 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:600323 HCAPLUS
DOCUMENT NUMBER: 133:194468
TITLE: Adhesive silicone elastomer films for electronic parts, materials coated or bonded using them, and method for die bonding
INVENTOR(S): Okinoshima, Hiroshige; Kashiwagi, Tsutomu
PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000234060	A2	20000829	JP 1999-359311	19991217
JP 3609971	B2	20050112		
TW 459018	B	20011011	TW 1999-88115239	19990903
KR 2000048200	A	20000725	KR 1999-58482	19991217
US 6312553	B1	20011106	US 1999-466887	19991220
PRIORITY APPLN. INFO.:			JP 1998-360938 A	19981818

AB The films are manufd. by radiation curing of films made of compns. comprising (A) X(R1)2SiO[(R1)2SiO]LSiR12X [X = R2Si(OR5)m(OR3)nR43-n-m ; R1, R4 = C1-9 (substituted) hydrocarbyl; R2 = C2-4 hydrocarbylene, O; R3 = C4-25 groups having 1-3 (meth)acryloyl; R5 = C1-18 hydrocarbyl; m = 0-2; n = 1-3; 1 ≤ n + m ≤ 3; L = 8-10,000], (B) **radiation sensitizers**, and (C) Si(OR6)4 [R6 = (substituted) lower alkyl] or their **partially hydrolyzed** condensates. Thus, two silicone wafers were heat-bonded by an elastomer film comprising reaction product of 2-dichloromethylsilylethyl-terminated di-Me di-Ph siloxane with NK Ester 701 A (2-hydroxy-1-acryloxy-3-methacyloxypropane) 100, 2-hydroxy-2-methyl-1-phenylpropan-1-one 2, 2,4,6-trimethylbenzoyldiphenylphosphine oxide 1, and Si(OMe)4 3 parts to give a test piece showing shear adhesive strength 5.0 kg/cm2.

IT **11099-06-2**, Tetraethoxysilane homopolymer
RL: MOA (Modifier or additive use); USES (Uses)
(oligomeric; adherent silicone elastomer films for electronic parts)

RN 11099-06-2 HCAPLUS

CN Silicic acid, ethyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 1343-98-2
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-17-5
CMF C2 H6 O

H_3C-CH_2-OH

IC ICM C08L083-05
ICS B32B025-20; C08J005-18; C08K005-5415; C09J007-00; C09J183-05

CC 39-15 (Synthetic Elastomers and Natural Rubber)
Section cross-reference(s): 76

ST adherent silicone elastomer film die bonding; elec part adhesive film polysiloxane alkoxysilane; silane **radiation sensitizer** polysiloxane film adhesion

IT **11099-06-2**, Tetraethoxysilane homopolymer 12002-26-5, Tetramethoxysilane homopolymer
RL: MOA (Modifier or additive use); USES (Uses)
(oligomeric; adherent silicone elastomer films for electronic parts)

L50 ANSWER 13 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:698163 HCAPLUS
DOCUMENT NUMBER: 131:323724
TITLE: Radiation-curable silicone rubber compositions having excellent adhesion
INVENTOR(S): Okinoshima, Hiroshige; Kashiwagi, Tsutomu; Yamaguchi, Shinsuke
PATENT ASSIGNEE(S): Shin-Etsu Chemical Industry Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11302348	A2	19991102	JP 1998-352010	19981211
JP 3615070	B2	20050126		
US 6069186	A	20000530	US 1998-212862	19981217
TW 440593	B	20010616	TW 1999-88100159	19990107

PRIORITY APPLN. INFO.: JP 1998-13296 A 19980108
JP 1998-51393 A 19980217

AB Title compns., useful as coatings for electronic parts, etc., comprise XSiR12O(SiR12O)LSiR12X [R1 = (un)substituted C1-9 hydrocarbyl; X = R2Si(OR5)m(OR3)nR43-m-n; R2 = C2-4 hydrocarbylene, O; R3 = C4-25 monovalent org. group contg. 1-3 (meth)acryloyl group; R4 = C1-9 (un)substituted C1-9 hydrocarbyl; R5 = C1-18 hydrocarbyl; n = 1-3; m = 0-2; 1 ≤ n + m ≤ 3; if n = 1, then R3 contains plural (meth)acryloyl groups; L = 8-10,000], **photosensitizers**, and Si(OR6)4 [R6 = C1-4 (alkoxy-substituted) alkyl] or their **partially hydrolyzed** condensed compds. Thus, [(CH2:CHCO2CH2)CH(CH2:CMeCO2CH2)O]2SiMeCH2CH2SiMe2(OSiMe2)131(OSiPh2)7OSiMe2CH2CH2SiMe[OCH(CH2O2CH:CH2)CH2O2CCMe:CH2]2 [prepd. from 571 g Cl2SiMeCH2CH2SiMe2(OSiMe2)131(OSiPh2)7OSiMe2CH2CH2SiMeCl2 and 47 g 2-hydroxy-1-acryloyloxy-3-methacryloyloxypropane] 100, 2-hydroxy-2-methyl-1-phenylpropane-1-one 2, 2,4,6-trimethylbenzoyldiphenylphosphine oxide 1, and Si(OMe)4 3 parts were mixed, applied on substrates, and cured to give coatings showing good peeling resistance.

IT **11099-06-2**, Silicic acid, ethyl ester
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(radiation-curable silicone rubber compns. having good adhesion)

RN 11099-06-2 HCAPLUS
CN Silicic acid, ethyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 1343-98-2
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-17-5
CMF C2 H6 O

H_3C-CH_2-OH

IC ICM C08F299-08
ICS C08F002-48; C08F290-06; C08K005-54; C08K005-56; C08L083-06; C08L083-07; C08G077-20
CC 39-10 (Synthetic Elastomers and Natural Rubber)
Section cross-reference(s): 42, 76
IT 78-10-4 **11099-06-2**, Silicic acid, ethyl ester
12002-26-5, Silicic acid, methyl ester
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(radiation-curable silicone rubber compns. having good adhesion)

L50 ANSWER 14 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:672925 HCAPLUS
DOCUMENT NUMBER: 131:300642
TITLE: Inorganic coating compositions and hydrophilic inorganic coating films
INVENTOR(S): Takahama, Koichi; Inoue, Minoru; Ikenaga, Junko; Nakamoto, Shoichi
PATENT ASSIGNEE(S): Matsushita Electric Works, Ltd., Japan
SOURCE: PCT Int. Appl., 38 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9952983	A1	19991021	WO 1999-JP1934	199904 12
W: CA, CN, JP, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
CA 2293790	AA	19991021	CA 1999-2293790	199904 12
EP 989166	A1	20000329	EP 1999-916046	199904 12
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

PRIORITY APPLN. INFO.: JP 1998-98668 A 199804 10
WO 1999-JP1934 W 199904 12

AB The compns. comprise, as major components, a photooxidizable

silicone resin having photooxidizable groups and a photosemiconductive material. Examples of the photooxidizable groups include C>3 alkyl, cycloalkyl, aralkyl, aryl, alkenyl, halohydrocarbyl groups, groups having a tertiary hydrogen atom (>CH-), groups having a C-C double bond and a C-H bond in the α-position with respect to the double bond, and groups having a branching point. The hydrophilic inorg. coating films formed from the inorg. coating compn. have high **sensitivity** to **UV**, rapidly become hydrophilic upon exposure to weak UV, and are useful for prevention of fogging and soiling on hard **surface**. Thus, mixing methyltrimethoxysilane 100 with phenyltrimethoxysilane 30, tetraethoxysilane 10, Oscal 1432 (silica) 90, i-PrOH 100 and water 90 parts at 60° for 5 h gave a soln. contg. siloxane polymer with Mw 1200-1800, which was combined with 20 phr Queen Titanic 11-1020 G (titania sol) to give a coating compn. (A). Coating the A on a glass **surface**, drying at room temp. for 0.5 h and baking at 150° for 1 h gave a hydrophilic coat film.

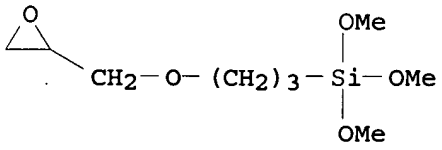
IT **143150-06-5P**, γ-Glycidoxypropyltrimethoxysilane-methyltrimethoxysilane-tetraethoxysilane copolymer
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(siloxane-based inorg. coating compns. contg. photosemiconductive substances for prevention of fogging and soiling on hard **surface**)

RN 143150-06-5 HCAPLUS

CN Silicic acid (H4SiO4), tetraethyl ester, polymer with trimethoxymethylsilane and trimethoxy[3-(oxiranylmethoxy)propyl]silane (9CI) (CA INDEX NAME)

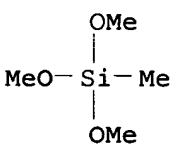
CM 1

CRN 2530-83-8
CMF C9 H20 O5 Si



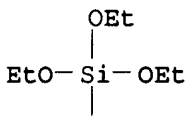
CM 2

CRN 1185-55-3
CMF C4 H12 O3 Si



CM 3

CRN 78-10-4
CMF C8 H20 O4 Si



IC ICM C09D001-00
ICS C09D005-00; C09D183-04; B05D007-24
CC 42-10 (Coatings, Inks, and Related Products)
IT **Coating materials**
(antisoiling; siloxane-based inorg. coating compns. contg. photosemiconductive substances for prevention of fogging and soiling on hard **surface**)
IT Antifogging agents
(coatings; siloxane-based inorg. coating compns. contg. photosemiconductive substances for prevention of fogging and soiling on hard **surface**)
IT **Coating materials**
(hydrophilic coatings; siloxane-based inorg. coating compns. contg. photosemiconductive substances for prevention of fogging and soiling on hard **surface**)
IT Catalysts
(photochem., metal oxides; siloxane-based inorg. coating compns. contg. photosemiconductive substances for prevention of fogging and soiling on hard **surface**)
IT Oxides (inorganic), uses
RL: CAT (Catalyst use); MOA (Modifier or additive use); USES (Uses)
(photosemiconductive substance; siloxane-based inorg. coating compns. contg. photosemiconductive substances for prevention of fogging and soiling on hard **surface**)
IT Polysiloxanes, uses
Polysiloxanes, uses
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(silicate-; siloxane-based inorg. coating compns. contg. photosemiconductive substances for prevention of fogging and soiling on hard **surface**)
IT Oxidation, photochemical
Photoconductors
(siloxane-based inorg. coating compns. contg. photosemiconductive substances for prevention of fogging and soiling on hard **surface**)
IT Glass, miscellaneous
RL: MSC (Miscellaneous)
(siloxane-based inorg. coating compns. contg. photosemiconductive substances for prevention of fogging and soiling on hard **surface**)
IT 7631-86-9, Oscal 1432, uses
RL: MOA (Modifier or additive use); USES (Uses)
(colloidal; siloxane-based inorg. coating compns. contg. photosemiconductive substances for prevention of fogging and soiling on hard **surface**)
IT 1306-19-0, Cadmium oxide, uses 1307-96-6, Cobalt oxide, uses 1308-38-9, Chromium oxide, uses 1309-37-1, Iron oxide (Fe2O3), uses 1309-60-0, Lead oxide 1310-53-8, Germanium oxide, uses

1313-13-9, Manganese oxide, uses 1313-27-5, Molybdenum oxide, uses
1313-96-8, Niobium oxide 1313-99-1, Nickel oxide (NiO), uses
1314-13-2, Zinc oxide, uses 1314-23-4, Zirconium oxide, uses
1314-35-8, Tungsten oxide, uses 1314-61-0, Tantalum oxide
1314-62-1, Vanadium oxide, uses 1317-38-0, Copper oxide, uses
1332-29-2, Tin oxide 11113-84-1, Ruthenium oxide 12624-27-0,
Rhenium oxide 12680-36-3, Rhodium oxide 13463-67-7, Tipaque ST
01, uses 219918-83-9, Queen Titanic 11-1020G
RL: CAT (Catalyst use); MOA (Modifier or additive use); USES (Uses)
(photosemiconductive substance; siloxane-based inorg. coating compns. contg. photosemiconductive substances for prevention of fogging and soiling on hard **surface**)

IT **143150-06-5P**, γ-Glycidoxypropyltrimethoxysilane-methyltrimethoxysilane-tetraethoxysilane copolymer 176036-26-3P, Methyltrimethoxysilane-phenyltrimethoxysilane-tetraethoxysilane copolymer 202577-73-9P, γ-Acryloxypropyltrimethoxysilane-methyltrimethoxysilane-tetraethoxysilane copolymer 247104-05-8P, 3-Acryloxypropyltrimethoxysilane-methyltriisopropoxysilane-methyltrimethoxysilane copolymer
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(siloxane-based inorg. coating compns. contg. photosemiconductive substances for prevention of fogging and soiling on hard **surface**)

IT 7429-90-5, Aluminum, miscellaneous
RL: MSC (Miscellaneous)
(substrate; siloxane-based inorg. coating compns. contg. photosemiconductive substances for prevention of fogging and soiling on hard **surface**)

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L50 ANSWER 15 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:472081 HCAPLUS
DOCUMENT NUMBER: 131:151668
TITLE: Photoreceptor with protective layer containing colloidal silica, siloxane resin, and fluorine-containing resin particles and electrophotographic apparatus
INVENTOR(S): Sato, Masahiro; Aoki, Katsumi; Kawahara, Masataka; Takatani, Itaru; Hiraoka, Keiko
PATENT ASSIGNEE(S): Canon K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 43 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11202524	A2	19990730	JP 1998-3517	19980109

PRIORITY APPLN. INFO.: JP 1998-3517 19980109

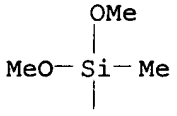
AB The electrophotog. photoreceptor comprises a support having thereon a **photosensitive** layer and a protective layer contg. a colloidal silica, a siloxane resin, and F-contg. resin particles. The app. involves a means of controlling exposure (laser) beams according to resolving power and tone of images to be recorded, a means of charging, a a means of developing, and the above photoreceptor. The photoreceptor shows improved abrasion resistance, cleaning capability, charging stability, and residual potential, providing images with improved tone reprodn. and uniformity.

IT **25498-03-7P**, Methyltrimethoxysilane homopolymer
218276-55-2P, Methyltriethoxysilane-3,3,4,4,5,5,6,6,6-nonafluorohexyltrimethoxysilane copolymer **218276-57-4P**, γ-Glycidoxypropyltrimethoxysilane-methyltriethoxysilane-perlfuorooctylethyltriethoxysilane copolymer **218276-58-5P**, γ-Glycidoxypropyltrimethoxysilane-methyltriethoxysilane-3,3,4,4,5,5,6,6,6-nonafluorohexyltrimethoxysilane copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(electrophotog. photoconductor having **surface**-protecting layer contg. colloidal silica, siloxane, and fluorine-contg. resin particles)

RN 25498-03-7 HCAPLUS
CN Silane, trimethoxymethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

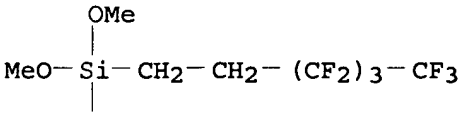
CRN 1185-55-3
CMF C4 H12 O3 Si



RN 218276-55-2 HCAPLUS
CN Silane, triethoxymethyl-, polymer with trimethoxy(3,3,4,4,5,5,6,6,6-nonafluorohexyl)silane (9CI) (CA INDEX NAME)

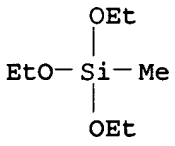
CM 1

CRN 85877-79-8
CMF C9 H13 F9 O3 Si



CM 2

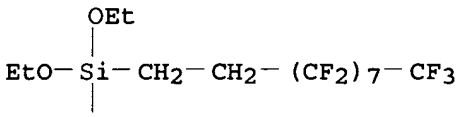
CRN 2031-67-6
CMF C7 H18 O3 Si



RN 218276-57-4 HCAPLUS
CN Silane, triethoxy(3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)-, polymer with triethoxymethylsilane and trimethoxy[3-(oxiranylmethoxy)propyl]silane (9CI) (CA INDEX NAME)

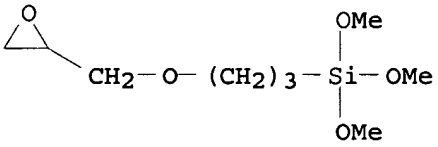
CM 1

CRN 101947-16-4
CMF C16 H19 F17 O3 Si



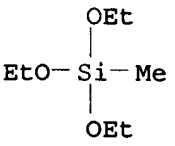
CM 2

CRN 2530-83-8
CMF C9 H20 O5 Si



CM 3

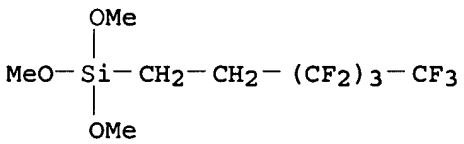
CRN 2031-67-6
CMF C7 H18 O3 Si



RN 218276-58-5 HCAPLUS
CN Silane, triethoxymethyl-, polymer with trimethoxy(3,3,4,4,5,5,6,6,6-nonafluorohexyl)silane and trimethoxy[3-(oxiranylmethoxy)propyl]silane (9CI) (CA INDEX NAME)

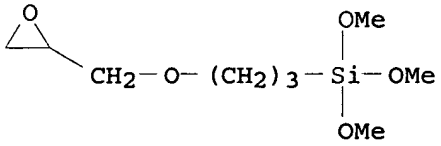
CM 1

CRN 85877-79-8
CMF C9 H13 F9 O3 Si



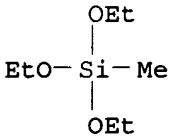
CM 2

CRN 2530-83-8
CMF C9 H20 O5 Si



CM 3

CRN 2031-67-6
CMF C7 H18 O3 Si



IC ICM G03G005-147
ICS G03G005-147; G03G005-04; G03G021-00
CC 74-3 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 42, 73
ST electrophotog photoconductor **surface** protective layer; colloidal silica siloxane protective layer photoreceptor; fluorine contg resin particle photoreceptor; abrasion resistant coating electrophotog photoconductor; laser beam exposure control electrophotog app
IT **Coating materials**
(abrasion-resistant; electrophotog. photoconductor having **surface**-protecting layer contg. colloidal silica, siloxane, and fluorine-contg. resin particles)
IT Electrophotographic photoconductors (photoreceptors)
(electrophotog. photoconductor having **surface**-protecting layer contg. colloidal silica, siloxane, and fluorine-contg. resin particles)
IT Fluoropolymers, uses

Polysiloxanes, uses
Silsesquioxanes
RL: TEM (Technical or engineered material use); USES (Uses)
(electrophotog. photoconductor having **surface** -protecting layer contg. colloidal silica, siloxane, and fluorine-contg. resin particles)

IT Lasers
(electrophotog. photoconductor having **surface** -protecting layer contg. colloidal silica, siloxane, and fluorine-contg. resin particles using)

IT Electrophotographic apparatus
(laser; electrophotog. photoconductor having **surface** -protecting layer contg. colloidal silica, siloxane, and fluorine-contg. resin particles)

IT 79-38-9D, Trifluorochloroethylene, polymers
RL: TEM (Technical or engineered material use); USES (Uses)
(Daiflon; electrophotog. photoconductor having **surface** -protecting layer contg. colloidal silica, siloxane, and fluorine-contg. resin particles)

IT **25498-03-7P**, Methyltrimethoxysilane homopolymer
153315-80-1P, Methyltrimethoxysilane homopolymer, sru
218276-55-2P, Methyltriethoxysilane-3,3,4,4,5,5,6,6,6-nonafluorohexyltrimethoxysilane copolymer **218276-57-4P**, γ-Glycidoxypropyltrimethoxysilane-methyltriethoxysilane-perlfuorooctylethyltriethoxysilane copolymer **218276-58-5P**, γ-Glycidoxypropyltrimethoxysilane-methyltriethoxysilane-3,3,4,4,5,5,6,6,6-nonafluorohexyltrimethoxysilane copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(electrophotog. photoconductor having **surface** -protecting layer contg. colloidal silica, siloxane, and fluorine-contg. resin particles)

IT 7631-86-9, Silica, uses 9002-84-0
RL: TEM (Technical or engineered material use); USES (Uses)
(electrophotog. photoconductor having **surface** -protecting layer contg. colloidal silica, siloxane, and fluorine-contg. resin particles)

L50 ANSWER 16 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:613963 HCAPLUS
DOCUMENT NUMBER: 127:264335
TITLE: Semipermanently hydrophilic photocatalytic coating compositions, forming coatings therefrom, and self cleaning, fouling prevention, and coated products using the same
INVENTOR(S): Sengoku, Makoto; Hayakawa, Makoto; Watabe, Toshiya; Furuya, Masahiro; Yamaya, Masaaki; Yamamoto, Akira
PATENT ASSIGNEE(S): Toto Ltd., Japan; Shin-Etsu Chemical Industry Co., Ltd.
SOURCE: Jpn. Kokai Tokkyo Koho, 23 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 09227829	A2	19970902	JP 1996-271700	199609 20
US 5755867	A	19980526	US 1996-777667	199612 20
PRIORITY APPLN. INFO.:			JP 1995-349454 A	199512 22
			JP 1995-350273 A	199512 22
			JP 1996-271700 A	199609 20

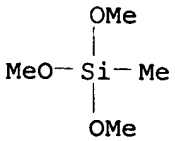
AB The title compns. contain curable silicones as essential film-forming material and photocatalyst particles for making the coating **surface** hydrophilic by photostimulation; the silicones have av. compn. R1pSi(OR2)qO(4-p-q)/2 (R1 = C1-18 org. functional group or groups; R2 = H, C1-4 org. group; p = 0.6-1.6; 0 < 1 <3.3; 0.7 < p + q < 4). An Al plate was baked with 3:1 silica sol-methyltrimethoxysilane to form a coating with water contact angle 90°, which was topped with a compn. from silica 39, methyltrimethoxysilane 97, and titania 87 parts with baking at 150° to give a topcoating with water contact angle 70° which decreased to below 3° upon UV irradn. for 5 days.

IT **25498-03-7P**, Methyltrimethoxysilane homopolymer
26355-29-3P, Propyltrimethoxysilane homopolymer
141087-43-6P, Tetraethoxysilane-methyltrimethoxysilane copolymer **149000-95-3P**, Dimethoxydimethylsilane-methyltrimethoxysilane copolymer **155591-74-5P**, Dimethoxydimethylsilane-methyltriethoxysilane copolymer **156637-69-3P**, γ-Glycidoxypropyltrimethoxysilane-methyltrimethoxysilane copolymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(semipermanently hydrophilic photocatalytic coating compns., forming coatings therefrom, and self cleaning, fouling prevention, and coated products using the same)

RN 25498-03-7 HCAPLUS
CN Silane, trimethoxymethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1185-55-3
CMF C4 H12 O3 Si

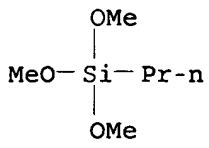


RN 26355-29-3 HCAPLUS

CN Silane, trimethoxypropyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

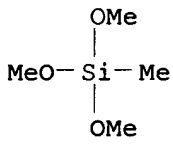
CRN 1067-25-0
CMF C6 H16 O3 Si



RN 141087-43-6 HCAPLUS
CN Silicic acid (H4SiO4), tetraethyl ester, polymer with trimethoxymethylsilane (9CI) (CA INDEX NAME)

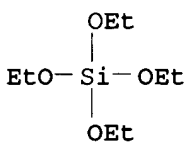
CM 1

CRN 1185-55-3
CMF C4 H12 O3 Si



CM 2

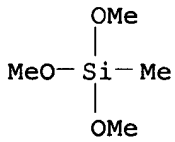
CRN 78-10-4
CMF C8 H20 O4 Si



RN 149000-95-3 HCAPLUS
CN Silane, dimethoxydimethyl-, polymer with trimethoxymethylsilane (9CI) (CA INDEX NAME)

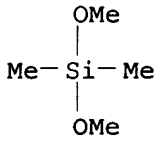
CM 1

CRN 1185-55-3
CMF C4 H12 O3 Si



CM 2

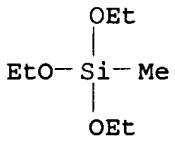
CRN 1112-39-6
CMF C4 H12 O2 Si



RN 155591-74-5 HCAPLUS
CN Silane, dimethoxydimethyl-, polymer with triethoxymethylsilane (9CI) (CA INDEX NAME)

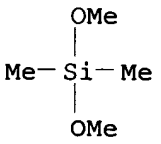
CM 1

CRN 2031-67-6
CMF C7 H18 O3 Si



CM 2

CRN 1112-39-6
CMF C4 H12 O2 Si

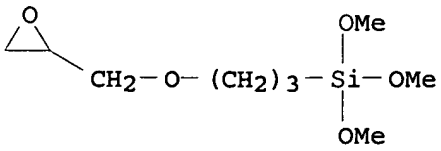


RN 156637-69-3 HCAPLUS
CN Silane, trimethoxymethyl-, polymer with trimethoxy[3-(oxiranylmethoxy)propyl]silane (9CI) (CA INDEX NAME)

CM 1

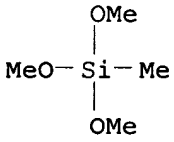
CRN 2530-83-8

CMF C9 H20 O5 Si



CM 2

CRN 1185-55-3
CMF C4 H12 O3 Si



IC ICM C09D183-04
ICS B01J035-02; C09D005-00
CC 42-12 (Coatings, Inks, and Related Products)
IT **Coating materials**
(antifouling; semipermanently hydrophilic photocatalytic coating compns., forming coatings therefrom, and self cleaning, fouling prevention, and coated products using the same)
IT **Coating materials**
(hydrophilic coatings, self-cleaning; semipermanently hydrophilic photocatalytic coating compns., forming coatings therefrom, and self cleaning, fouling prevention, and coated products using the same)
IT **Coating materials**
Coating materials
(**light-sensitive**; semipermanently hydrophilic photocatalytic coating compns., forming coatings therefrom, and self cleaning, fouling prevention, and coated products using the same)
IT **25498-03-7P**, Methyltrimethoxysilane homopolymer
26355-29-3P, Propyltrimethoxysilane homopolymer
141087-43-6P, Tetraethoxysilane-methyltrimethoxysilane copolymer **149000-95-3P**, Dimethoxydimethylsilane-methyltrimethoxysilane copolymer 153315-80-1P, Methyltrimethoxysilane homopolymer, sru **155591-74-5P**, Dimethoxydimethylsilane-methyltriethoxysilane copolymer 155968-09-5P **156637-69-3P**, γ-Glycidoxypropyltrimethoxysilane-methyltrimethoxysilane copolymer 171247-01-1P, Phenyltrimethoxysilane-vinyltrimethoxysilane copolymer 190731-65-8P, Dimethoxydimethylsilane-phenyltrimethoxysilane copolymer 196086-26-7P, Phenyltrimethoxysilane-propyltrimethoxysilane copolymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(semipermanently hydrophilic photocatalytic coating compns., forming coatings therefrom, and self cleaning, fouling

prevention, and coated products using the same)

L50 ANSWER 17 OF 17 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:248422 HCAPLUS
DOCUMENT NUMBER: 122:12236
TITLE: Conductive coating compositions and the coating process
INVENTOR(S): Sasaki, Han; Oomori, Eiji; Matsuzawa, Jun
PATENT ASSIGNEE(S): Hitachi Chemical Co Ltd, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 4 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 06166834	A2	19940614	JP 1992-321971	19921201

PRIORITY APPLN. INFO.: JP 1992-321971 19921201

AB Coatings for Braun tubes and glass covers of other office automation displays for antistatic purpose consist of siloxane polymers obtained from hydrolytic polymn. of a tetraalkoxysilane, a mixt. of a silane coupling agent and antimony-doped tin oxide powder with particle size ≤0.2 μm, inorg. oxide particles with particle size ≤0.2 μm, a **photo sensitizer**, and a solvent. A coating layer on a base material is formed by applying the compn. to the **surface** of the base material followed by curing the coating with UV irradn. or with UV irradn. and heating. One such compn. contained hydrolytic polymer of Si(OEt)4, antimony-doped tin oxide (particle size 0.05 μm), γ-methacryloyloxypropyltrimethoxysilane, silica, benzildimethyl ketal, and Me Et ketone and was applied to a glass plate and cured by UV irradn. for 3 min then heating at 100° for 10 min. The cured coating layer had **surface** resistance 3 + 108 Ω, transmittance 90%, and pencil hardness 7H.

IT **11099-06-2**, Tetraethoxysilane homopolymer
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(conductive coating compns. and the coating process)

RN 11099-06-2 HCAPLUS
CN Silicic acid, ethyl ester (9CI) (CA INDEX NAME)

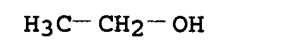
CM 1

CRN 1343-98-2
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-17-5
CMF C2 H6 O



IC ICM C09D005-24
ICS C09D183-06; H01B001-20
CC 42-10 (Coatings, Inks, and Related Products)
IT **Coating materials**
(elec. conductive, conductive coating compns. and the coating process)
IT **Coating process**
(photochem., conductive coating compns. and the coating process)
IT 78-93-3, Methyl ethyl ketone, uses 1344-28-1, Aluminum oxide (Al2O3), uses 2530-85-0, γ-Methacryloyloxypropyltrimethoxysilane 7631-86-9, Aerogel 200, uses **11099-06-2**, Tetraethoxysilane homopolymer 24650-42-8, Benzildimethyl ketal 93196-90-8, T 1 (Conductor)
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(conductive coating compns. and the coating process)

=> d l51 ibib abs hitstr hitind 1-14

L51 ANSWER 1 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:603848 HCAPLUS
DOCUMENT NUMBER: 145:64609
TITLE: Active energy ray curable resion compositions with good hardness and handleability and short fast curability
INVENTOR(S): Kitano, Takahiro; Matsugi, Hiroshi; Imazu, Takashi; Kubo, Keiji; Ogushi, Masayasu; Suzuki, Hirokazu
PATENT ASSIGNEE(S): Kuraray Co., Ltd., Japan
SOURCE: PCT Int. Appl., 60 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006064884	A1	20060622	WO 2005-JP23076	200512 15

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD,

TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: JP 2004-363631 A 200412 15

JP 2005-93020 A 200503 28

AB Title curable resion compns. with glass transition temp. 15-100° comprise a vinyl polymer having an alkoxysilyl as a side chain and a photoacid generator wherein ≥90% of contained Si-atom-contg. compd. or Si-atom-contg. compd. units are represented by (R1)nSi(OR2)4-n; R1 = unit of main chain, or residue bonded to main chain, or polymerizable group capable of becoming the unit and/or the residue, or optionally substituted alkyl or aryl, of the vinyl polymer; R2 = C1-C5 alkyl; and n = 1-3 integer. Thus, a coating compn. comprising a Me methacrylate-KBM 503 copolymer with Mw 116 + 103 20, SarCat CD 1012 1, Me iso-Bu ketone 30, and MEK 49% was applied on an acrylic plate, dried at 80° for 30 s, heated at 190° for 3 min, vacuum-molded, and irradiated to give a test piece, showing glass transition temp. (before crosslinking) 22.8°, good handleability, moldability, and scratch resistance, and tack properties, and pencil hardness 5H.

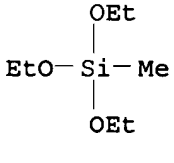
IT **25930-91-0P**, Methyltriethoxysilane homopolymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(low refractive layer; active energy ray curable resion compns. with good hardness and handleability and short fast curability)

RN 25930-91-0 HCAPLUS

CN Silane, triethoxymethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 2031-67-6
CMF C7 H18 O3 Si



CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): **74**

IT **Coating materials**
(**radiation**-curable; **active** energy ray curable resion compns. with good hardness and handleability and short fast curability)

IT **25930-91-0P**, Methyltriethoxysilane homopolymer
153315-80-1P, Methyltriethoxysilane homopolymer, ladder SRU
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(low refractive layer; active energy ray curable resion compns. with good hardness and handleability and short fast curability)

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L51 ANSWER 2 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:232631 HCAPLUS
DOCUMENT NUMBER: 144:294472
TITLE: Visible **light-sensitive** photocatalyst compositions, their manufacture, their coating films, and laminates and moldings having the films
INVENTOR(S): Kanamori, Taro; Yajima, Keisuke; Nishikawa, Akira
PATENT ASSIGNEE(S): Jsr Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 39 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2006070213	A2	20060316	JP 2004-257602	20040903
PRIORITY APPLN. INFO.:			JP 2004-257602	20040903

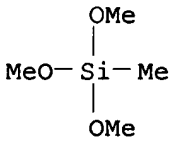
AB Title compns. comprise (A) Pt compd.-contg. oxide semiconductors with photocatalytic **activity** for visible **light**, (B) polysiloxanes R1aSiOb(OH)c(OR2)dYe (R1 = C1-8 org. group; R2 = C1-6 alkyl or acyl, Ph; Y = halo, H; a ≥0 and <2; b, c, d, e ≥0 and <4; a + b/2 + c + d + e = 4) with av. d.p. ≥5, and (D) Si-O bond-contg. organosiloxane oligomers, with wt.-av. mol. wt. 300-100,000, having (R5O)p(R6O)qR7 (R5, R6 = C1-5 alkyl; R7 = H, C1-5 alkyl; p + q = 2-50) in side chains and/or terminals. Laminates comprising org. substrates of ≤1000-μm films, intermediate layers, and photocatalyst layers of the compns. are also claimed. The compns. showing high photocatalytic activity in indoor use are useful for illumination covers, wallpaper, automotive interior materials, and mirrors. Thus, a compn. contg. Pt compd.-contg. TiO2, X 40-9220 (polysiloxane), and MAC 2101 (organosiloxane oligomer) showed good storage stability and low haze.

IT **149000-95-3P**, Dimethyldimethoxysilane-methyltrimethoxysilane copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(intermediate layers; manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)

RN 149000-95-3 HCAPLUS
CN Silane, dimethoxydimethyl-, polymer with trimethoxymethylsilane (9CI) (CA INDEX NAME)

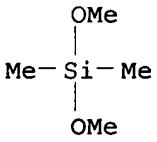
CM 1

CRN 1185-55-3
CMF C4 H12 O3 Si



CM 2

CRN 1112-39-6
CMF C4 H12 O2 Si



IT **11099-06-2**, Ethyl Silicate 48
RL: TEM (Technical or engineered material use); USES (Uses)
(manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)
RN 11099-06-2 HCAPLUS
CN Silicic acid, ethyl ester (9CI) (CA INDEX NAME)

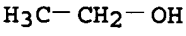
CM 1

CRN 1343-98-2
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-17-5
CMF C2 H6 O



CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): **74**
IT Silanes
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(alkoxy; manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)
IT Transparent materials
(coatings; manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent

coatings)
IT **Coating materials**
(**light-sensitive**; manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)
IT Photolysis catalysts
(manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)
IT Polysiloxanes, uses
Silsesquioxanes
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)
IT Laminated plastics, uses
Molded plastics, uses
Polyesters, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)
IT Semiconductor materials
(oxides; manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)
IT Polysiloxanes, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(polyoxyalkylene-, epoxy-contg., MAC 2101; manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)
IT Polyoxyalkylenes, uses
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(siloxane-, epoxy-contg., MAC 2101; manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)
IT Wood
(substrates; manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)
IT Acrylic polymers, uses
Polycarbonates, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(substrates; manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)
IT **Coating materials**
(transparent; manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)
IT 104133-11-1
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(assumed monomers; manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)
IT 14782-75-3, Aluminum diisopropoxyethylacetoacetate
RL: CAT (Catalyst use); USES (Uses)
(condensation catalysts; manuf. of photocatalyst compns. with high **activity** for visible **light** giving

transparent coatings)

IT **149000-95-3P**, Dimethyldimethoxysilane-methyltrimethoxysilane copolymer 367501-88-0P, Cyclohexyl methacrylate-2-ethylhexyl acrylate-glycidyl methacrylate-γ-methacryloxypropyltrimethoxysilane-4-methacryloyloxy-2,2,6,6-tetramethylpiperizine-methyl methacrylate copolymer 367501-89-1P, Cyclohexyl methacrylate-2-ethylhexyl acrylate-2-hydroxyethyl methacrylate-γ-methacryloxypropyltrimethoxysilane-4-methacryloyloxy-2,2,6,6-tetramethylpiperizine-methyl methacrylate copolymer 878384-31-7P, Butyl acrylate-glycidyl methacrylate-γ-methacryloxypropyltrimethoxysilane-4-methacryloyloxy-2,2,6,6-tetramethylpiperizine-methyl methacrylate copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(intermediate layers; manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)

IT 7440-06-4D, Platinum, compds. 13463-67-7, Titanium dioxide, uses
RL: CAT (Catalyst use); USES (Uses)
(manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)

IT 1185-55-3, Methyltrimethoxysilane
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)

IT 153315-80-1, X 40-9220
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)

IT **11099-06-2**, Ethyl Silicate 48
RL: TEM (Technical or engineered material use); USES (Uses)
(manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)

IT 9011-14-7, Poly(methyl methacrylate) 25038-59-9, uses 106677-58-1, ABS resin
RL: TEM (Technical or engineered material use); USES (Uses)
(substrates; manuf. of photocatalyst compns. with high **activity** for visible **light** giving transparent coatings)

L51 ANSWER 3 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:1019048 HCAPLUS
DOCUMENT NUMBER: 142:13477
TITLE: Insect-repellent fluorescent lamp covers having yellow light area and manufacture thereof
INVENTOR(S): Yeh, Kuei-Ching
PATENT ASSIGNEE(S): Han, Shih-Ming, Taiwan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2004335300 A2 20041125 JP 2003-130262 200305 08

PRIORITY APPLN. INFO.: JP 2003-130262 200305 08

AB The covers have, on the circumferences of cold light source-arranged glass bulbs, UV-absorbing yellow area formed by jet printing of viscous (20-80-cP) yellow chems. followed by drying/curing in oven (at 100-160°). The chems. may be applied at thickness of 1-10 μm. The covers are for fluorescent lamps used in semiconductor plants handling **photosensitive** materials.

IT **797026-28-9P**, E 114-3-Glycidoxypropyltrimethoxysilane copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(yellow inks; manuf. of insect-repellent covers having yellow area for fluorescent lamps used in semiconductor plants)

RN 797026-28-9 HCAPLUS

CN Silane, trimethoxy[3-(oxiranylmethoxy)propyl]-, polymer with E 114 (9CI) (CA INDEX NAME)

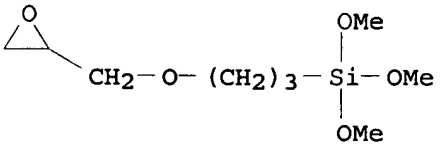
CM 1

CRN 797024-23-8
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 2530-83-8
CMF C9 H20 O5 Si



IC ICM H01J061-40

CC 73-11 (Optical, Electron, and Mass Spectroscopy and Other Related Properties)
Section cross-reference(s): **76**

IT **Coating process**
(spray, jet; manuf. of insect-repellent covers having yellow area for fluorescent lamps used in semiconductor plants)

IT **797026-28-9P**, E 114-3-Glycidoxypropyltrimethoxysilane copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(yellow inks; manuf. of insect-repellent covers having yellow area for fluorescent lamps used in semiconductor plants)

L51 ANSWER 4 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:411904 HCAPLUS

DOCUMENT NUMBER: 138:403143
TITLE: Two-component photocatalytic coatings containing oxide semiconductors, and formation of coating films from them
INVENTOR(S): Shimatani, Hiroyuki; Nishimoto, Joji; Matsuo, Shinya; Obata, Takahisa
PATENT ASSIGNEE(S): Sumitomo Metal Mining Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2003155425	A2	20030530	JP 2001-355584	200111 21

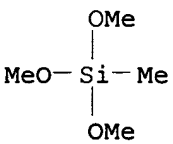
PRIORITY APPLN. INFO.: JP 2001-355584 200111 21

AB The coatings comprise (A) solns. contg. photocatalyst microparticles comprising composite oxides having heterojunctions contg. p-type oxide semiconductors and n-type oxide semiconductors, ≥1 of which show photocatalytic **activity** at visible **light** region, and (B) solns. contg. Me-contg. monosilanes and/or silane oligomers. Thus, a soln. contg. anatase-type TiO2 and Ca(Zr0.95Y0.05)O3-δ and a soln. contg. MeSi(OMe)3 were mixed and applied to a stainless steel sheet to give a test piece showing good transparency, interlayer adhesion, red ink decompn. by light irradn., and hydrophilicity.

IT **25498-03-7**, Methyltrimethoxysilane homopolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(binder; two-component photocatalytic coatings contg. oxide semiconductors)
RN 25498-03-7 HCAPLUS
CN Silane, trimethoxymethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1185-55-3
CMF C4 H12 O3 Si



IC ICM C09D001-00
ICS B01J023-08; B01J023-10; B01J035-02; B05D003-02; B05D005-00; B05D007-24; C09D005-00; C09D183-04; E04B001-64
CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): **74**, **76**
IT **Coating materials**

(two-component; two-component photocatalytic coatings contg. oxide semiconductors)
IT **25498-03-7**, Methyltrimethoxysilane homopolymer 153315-80-1
RL: TEM (Technical or engineered material use); USES (Uses)
(binder; two-component photocatalytic coatings contg. oxide semiconductors)

L51 ANSWER 5 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:814209 HCAPLUS
DOCUMENT NUMBER: 137:326098
TITLE: **Photoreactive** and photocurable compositions containing hydrolyzable silicone compounds
INVENTOR(S): Takahashi, Katsunori; Fukui, Hiroji; Kawabata, Kazuhiro; Kuroda, Takeo; Ichitani, Motokuni; Nakatani, Yasuhiro
PATENT ASSIGNEE(S): Sekisui Chemical Co., Ltd., Japan
SOURCE: PCT Int. Appl., 104 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002083764	A1	20021024	WO 2002-JP3520	20020409
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
JP 2003213001	A2	20030730	JP 2002-102854	20020404
CA 2443406	AA	20021024	CA 2002-2443406	20020409
EP 1391476	A1	20040225	EP 2002-714550	20020409
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
TW 591058	B	20040611	TW 2002-91107029	20020409
CN 1524104	A	20040825	CN 2002-807951	20020409
US 2004202956	A1	20041014	US 2004-474376	20040310

PRIORITY APPLN. INFO.:

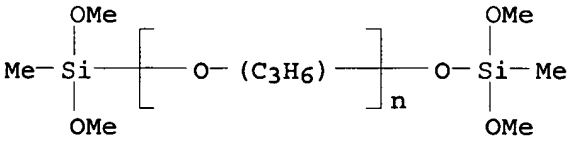
JP 2001-110138	A	200104 09
JP 2001-347708	A	200111 13
JP 2001-357853	A	200111 22
JP 2002-62421	A	200203 07
WO 2002-JP3520	W	200204 09

AB The compns. are useful for pattern formation, elec. conductive materials, elec. insulating materials, antireflective membranes, photoresists, color filters, adhesives, coatings, seals, gas barriers, etc., and contain a hydrolyzable metal compd. (A), e.g., alkylalkoxysilane derivs., and a compd. (B) capable of accelerating hydrolytic polycondensation and crosslinking of A in the presence of oxygen and under light irradn. Thus, mixing 100 parts Kaneka MS-S 303 (methyldimethoxysilyl-terminated polypropylene glycol) with 0.5 parts maleic anhydride, and mild-heating gave a title compn., which was exposed under high pressure Hg lamp to give a test sample.

IT **77396-40-8**, Kaneka MS-S 303
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(hydrolytically crosslinked; **photoreactive** and photocurable compns. contg. hydrolyzable silicone compds.)

RN 77396-40-8 HCAPLUS

CN Poly[oxy(methyl-1,2-ethanediyl)], α-(dimethoxymethylsilyl)-ω-[(dimethoxymethylsilyl)oxy]- (9CI) (CA INDEX NAME)



IT **473563-36-9DP**, polymer with epoxy resins
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(**photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)

RN 473563-36-9 HCAPLUS

CN Poly[oxy(methyl-1,2-ethanediyl)], α-(dimethoxymethylsilyl)-ω-[(dimethoxymethylsilyl)oxy]-, polymer with Cyracure UVI 6990 (9CI) (CA INDEX NAME)

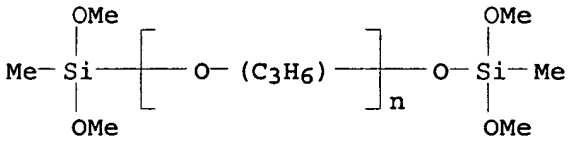
CM 1

CRN 104558-95-4
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 77396-40-8
CMF (C3 H6 O)n C6 H18 O5 Si2
CCI IDS, PMS



IT **11099-06-2P**, Tetraethoxysilane homopolymer
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)
RN 11099-06-2 HCAPLUS
CN Silicic acid, ethyl ester (9CI) (CA INDEX NAME)

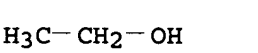
CM 1

CRN 1343-98-2
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-17-5
CMF C2 H6 O



IC ICM C08G077-00
ICS C08G079-00; C08L087-00; C08L101-10; C09D187-00; C09D201-10; C09J187-00; C09J201-10; C08J005-18; C09K003-10; G02B001-10; G02B003-00; G02B005-20; G02B006-13; G03F007-075; H01B001-12; H01B003-46; H01L051-00; H05B033-12; H05B033-14
CC 37-6 (Plastics Manufacture and Processing)
Section cross-reference(s): 38, 42, **74**, **76**
ST hydrolyzable metal compd methyldimethoxysilyl terminated polyoxypropylene **photoreactive** compn; maleic anhydride light irradn crosslinking agent photocurable compn
IT Polymerization
Polymerization catalysts
(hydrolytic; **photoreactive** and photocurable compns.

contg. hydrolyzable silane compds.)
IT **Coating materials**
(**light-sensitive**; **photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)
IT Adhesives
Coating materials
Sealing compositions
(photocurable; **photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)
IT Antireflective films
Conducting polymers
Electric insulators
Light-sensitive materials
Optical filters
Photoresists
(**photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)
IT Silicates, properties
Silsesquioxanes
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)
IT Polysiloxanes, properties
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(polyoxyalkylene-; **photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)
IT Silsesquioxanes
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyoxyalkylene-polysiloxane-; **photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)
IT Silsesquioxanes
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyoxyalkylene-silicate-; **photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)
IT Polysiloxanes, preparation
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polyoxyalkylene-silsesquioxane-; **photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)
IT Polyoxyalkylenes, properties
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(polysiloxane-; **photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)
IT Polyoxyalkylenes, preparation
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(polysiloxane-silsesquioxane-; **photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)
IT Polyoxyalkylenes, preparation
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(silicate-silsesquioxane-; **photoreactive** and

photocurable compns. contg. hydrolyzable silane compds.)

IT 473714-60-2, U 130
RL: CAT (Catalyst use); USES (Uses)
(U 130, hydrolytic polycondensation catalyst; **photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)

IT 22673-19-4, Dibutyltin bis(acetylacetonate)
RL: CAT (Catalyst use); USES (Uses)
(hydrolytic polycondensation catalyst; **photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)

IT 178535-69-8, Kaneka MS-S 203
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(hydrolytically crosslinked; **photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)

IT **77396-40-8**, Kaneka MS-S 303
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(hydrolytically crosslinked; **photoreactive** and photocurable compns. contg. hydrolyzable silicone compds.)

IT 226910-21-0P 473563-32-5P 473563-33-6P 473563-34-7P
473563-36-9DP, polymer with epoxy resins
RL: CPS (Chemical process); IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); PROC (Process); USES (Uses)
(**photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)

IT 52496-08-9, Aronix M 270 473713-42-7, Excestar ESS 3630
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)

IT 12002-26-5, MS 57 133924-23-9, Aronix M 1310 223537-47-1, Epion EP 103S
RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); PRP (Properties); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(**photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)

IT 9003-49-0P, Butyl acrylate homopolymer 27458-65-7P, Cyclohexyl acrylate homopolymer 57758-91-5P, Trimethylolpropane trivinyl ether homopolymer 287925-98-8P, Aronix M 110 homopolymer 473563-22-3P 473563-24-5P 473563-25-6P 473563-26-7P 473563-29-0P 473563-30-3P 473563-31-4P 473714-61-3P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**photoreactive** and photocurable compns. contg. hydrolyzable silane compds.)

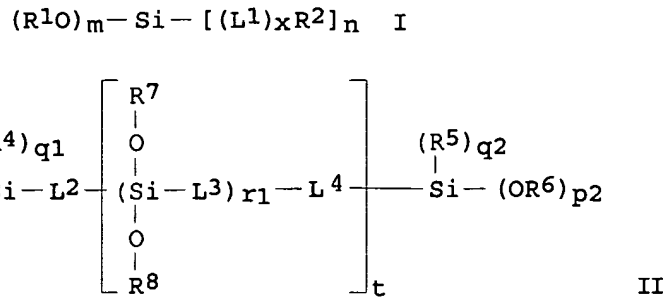
IT **11099-06-2P**, Tetraethoxysilane homopolymer 33516-19-7P, 2-Ethylhexyl acrylate-3-(trimethoxysilyl)propyl methacrylate copolymer 167114-69-4P 473563-35-8P 473563-37-0P 473714-62-4P
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**photoreactive** and photocurable compns. contg.

hydrolyzable silane compds.)
IT 108-31-6, Maleic anhydride, uses 1631-25-0, N-Cyclohexylmaleimide
162881-26-7, Irgacure 819
RL: CAT (Catalyst use); USES (Uses)
(**photosensitizer**; **photoreactive** and
photocurable compns. contg. hydrolyzable silane compds.)
IT 24650-42-8, Irgacure 651 75081-21-9, Isopropylthioxanthone
RL: CAT (Catalyst use); USES (Uses)
(radical initiator, crosslinking accelerator;
photoreactive and photocurable compns. contg.
hydrolyzable silane compds.)
REFERENCE COUNT: 21 THERE ARE 21 CITED REFERENCES AVAILABLE
FOR THIS RECORD. ALL CITATIONS AVAILABLE
IN THE RE FORMAT

L51 ANSWER 6 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:709840 HCAPLUS
DOCUMENT NUMBER: 135:264606
TITLE: Photothermographic material
INVENTOR(S): Habu, Takeshi; Nishiwaki, Shu; Mitsuhashi,
Tsuyoshi; Takeyama, Toshihisa; Hasegawa, Takuji
PATENT ASSIGNEE(S): Konica Corporation, Japan
SOURCE: Eur. Pat. Appl., 39 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1136877	A2	20010926	EP 2001-302616	200103 21
EP 1136877	A3	20030423		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
JP 2001264930	A2	20010928	JP 2000-77904	200003 21
US 2002022203	A1	20020221	US 2001-817333	200103 16
US 6461805	B2	20021008		
PRIORITY APPLN. INFO.:			JP 2000-77904 A	200003 21

OTHER SOURCE(S): MARPAT 135:264606
GI

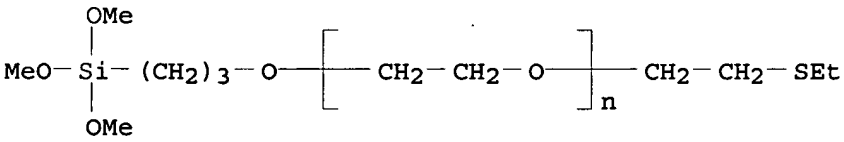


AB The invention relates to a photothermog. material, its prepn. and a coating app. for use in the prepn., the photothermog. material showing superior performance and storage stability, and having a layer strength to cause no abrasion mark without causing uneven coating or coating coagulation. The photothermog. material comprises a support having **light-sensitive** silver halide grains, an org. silver salt, a reducing agent and a binder, where the photothermog. material comprises a silane compd. represented by (I) and (II), where R1-R8 represent an alkyl, alkenyl, aryl or a heterocyclic group each which may be substituted; L1-L4 represent each a bivalent linkage group; m and n are an integer 1-3 provided that m+n is 4; p1 and p2 are each an integer 1-3 and q1 and q2 are each 0-2 provided that p1+q1 and p2+q2 are each 3; r1 and t are each 0 or 1-1000; and x=0 or 1.

IT **362478-64-6**
RL: TEM (Technical or engineered material use); USES (Uses)
(photothermog. material contg. org. silver salt and reducing agent and binder and silane)

RN 362478-64-6 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-[2-(ethylthio)ethyl]-ω-[3-(trimethoxysilyl)propoxy]- (9CI) (CA INDEX NAME)



IC ICM G03C001-498

CC **74-7** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

IT **Coating materials**
Photothermographic copying
(photothermog. material contg. org. silver salt and reducing agent and binder and silane)

IT 3068-76-6 38280-61-4 68845-16-9 130570-74-0 134429-63-3
252988-64-0 357271-20-6 362478-57-7 362478-58-8 362478-59-9
362478-60-2 362478-61-3 362478-62-4 362478-63-5
362478-64-6
RL: TEM (Technical or engineered material use); USES (Uses)
(photothermog. material contg. org. silver salt and reducing agent and binder and silane)

L51 ANSWER 7 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:252848 HCAPLUS
DOCUMENT NUMBER: 134:273470
TITLE: Photocatalytic coatings **activated** with visible **light** and articles having the coatings
INVENTOR(S): Sugihara, Shinichi
PATENT ASSIGNEE(S): Kankyo Device Kenkyusho Y. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001096168	A2	20010410	JP 1999-275283	19990928
PRIORITY APPLN. INFO.:			JP 1999-275283	19990928

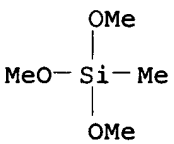
AB The coatings comprise organopolysiloxane polycondensates and semiconductor oxide photocatalyst particles, that have stable O defect and are activated by irradn. with visible light. The oxides may be TiO2, hafnium oxide, zirconium oxide, strontium titanate, titanium zirconium mixed oxide, or silicon titanium oxide. The coatings may also contain oxide colloids, e.g. colloidal silica, and/or adsorbents, e.g. zeolite. Articles, e.g. walls, ceilings, floors, windows, blinds, curtains, etc., having the coatings are also claimed. The coatings show excellent NOx decompn. characteristics, resistance to fouling with seaweed, and ultra-hydrophilicity.

IT **25498-03-7P**, Methyltrimethoxysilane homopolymer
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(organopolysiloxane coatings contg. semiconductive oxide photocatalysts for formation of functional coatings on building interiors and exteriors)

RN 25498-03-7 HCAPLUS
CN Silane, trimethoxymethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1185-55-3
CMF C4 H12 O3 Si



IC ICM B01J035-02
ICS B05D005-00; B05D007-00; C01G023-047; C08K003-22; C09D005-16;

C09D183-04
CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 42
IT **Coating materials**
(antifouling, marine; organopolysiloxane coatings contg. semiconductive oxide photocatalysts for formation of functional coatings on building interiors and exteriors)
IT **Coating materials**
(antisoiling; organopolysiloxane coatings contg. semiconductive oxide photocatalysts for formation of functional coatings on building interiors and exteriors)
IT **25498-03-7P**, Methyltrimethoxysilane homopolymer
RL: CAT (Catalyst use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(organopolysiloxane coatings contg. semiconductive oxide photocatalysts for formation of functional coatings on building interiors and exteriors)

L51 ANSWER 8 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:110001 HCAPLUS
DOCUMENT NUMBER: 134:164583
TITLE: Radiation-curable coating compositions for antireflective films in LCD devices
INVENTOR(S): Yasuda, Tomokazu
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001040284	A2	20010213	JP 1999-212394	19990727

PRIORITY APPLN. INFO.: JP 1999-212394 19990727

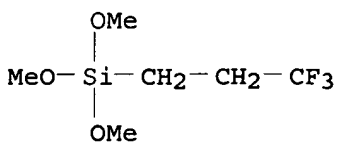
AB The title films are prepd. by coating on a support film such as a triacetate cellulose film with multilayers in the order of: (1) a gelation primer layer, (2) an acrylic hard coat, (3) a medium refractive index layer, (4) a high refractive index layer, and (5) a low refractive index layer (A) and hardening the film at 100° and exposing to actinic radiation such as electron beam, microwave and UV light, wherein the A is obtained from the hydrolytic condensation products of organosilane compds. with organosilyl group-contg. polymers as a sol soln.
IT **215879-20-2**, Tetraethoxysilane-3,3,3-trifluoropropyltrimethoxysilane copolymer **325699-03-4**, Tetraethoxysilane-1H,1H,2H,2H-tetrahydroperfluorooctyltrimethoxysilane-3,3,3-trifluoropropyltrimethoxysilane copolymer **325699-06-7 325699-07-8**
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(low refractive index layer; radiation-curable coating compns. for antireflective films in LCD devices)

RN 215879-20-2 HCAPLUS
CN Silicic acid (H4SiO4), tetraethyl ester, polymer with trimethoxy(3,3,3-trifluoropropyl)silane (9CI) (CA INDEX NAME)

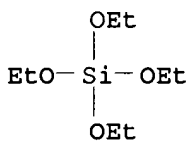
CM 1

CRN 429-60-7
CMF C6 H13 F3 O3 Si



CM 2

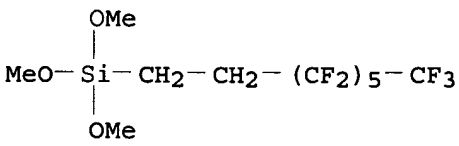
CRN 78-10-4
CMF C8 H20 O4 Si



RN 325699-03-4 HCAPLUS
CN Silicic acid (H4SiO4), tetraethyl ester, polymer with trimethoxy(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)silane and trimethoxy(3,3,3-trifluoropropyl)silane (9CI) (CA INDEX NAME)

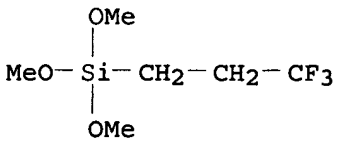
CM 1

CRN 85857-16-5
CMF C11 H13 F13 O3 Si



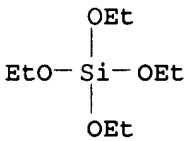
CM 2

CRN 429-60-7
CMF C6 H13 F3 O3 Si



CM 3

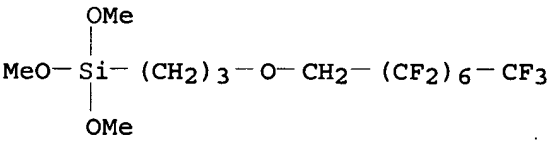
CRN 78-10-4
CMF C8 H20 O4 Si



RN 325699-06-7 HCAPLUS
CN Silicic acid (H4SiO4), tetraethyl ester, polymer with trimethoxymethylsilane and trimethoxy[3-[(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctyl)oxy]propyl]silane (9CI) (CA INDEX NAME)

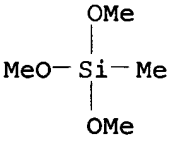
CM 1

CRN 325699-05-6
CMF C14 H17 F15 O4 Si



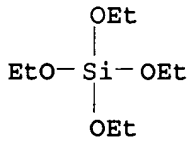
CM 2

CRN 1185-55-3
CMF C4 H12 O3 Si



CM 3

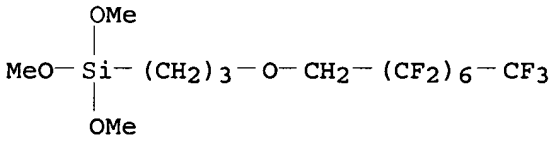
CRN 78-10-4
CMF C8 H20 O4 Si



RN 325699-07-8 HCAPLUS
CN Silicic acid (H4SiO4), tetraethyl ester, polymer with trimethoxy[3-[(2,2,3,3,4,4,5,5,6,6,7,7,8,8,8-pentadecafluorooctyl)oxy]propyl]silane, trimethoxy(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)silane and trimethoxy(3,3,3-trifluoropropyl)silane (9CI) (CA INDEX NAME)

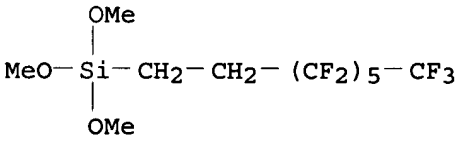
CM 1

CRN 325699-05-6
CMF C14 H17 F15 O4 Si



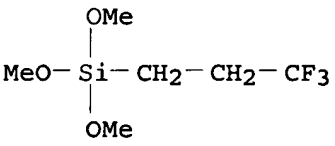
CM 2

CRN 85857-16-5
CMF C11 H13 F13 O3 Si



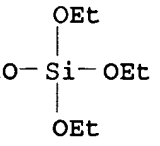
CM 3

CRN 429-60-7
CMF C6 H13 F3 O3 Si



CM 4

CRN 78-10-4
CMF C8 H20 O4 Si



IC ICM C09D183-04
ICS C09D005-00; G02B001-11; G02F001-1335
CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): **74**, **76**
IT **Coating materials**
(multilayer; radiation-curable coating compns. for antireflective films in LCD devices)
IT **215879-20-2**, Tetraethoxysilane-3,3,3-trifluoropropyltrimethoxysilane copolymer **325699-03-4**, Tetraethoxysilane-1H,1H,2H,2H-tetrahydroperfluorooctyltrimethoxysilane-3,3,3-trifluoropropyltrimethoxysilane copolymer **325699-06-7** **325699-07-8**
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); TEM (Technical or engineered material use); USES (Uses)
(low refractive index layer; radiation-curable coating compns. for antireflective films in LCD devices)
IT 82799-44-8, Kayacure DETX
RL: CAT (Catalyst use); USES (Uses)
(**photosensitizer**; radiation-curable coating compns. for antireflective films in LCD devices)

L51 ANSWER 9 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:85495 HCAPLUS
DOCUMENT NUMBER: 134:123492
TITLE: Method for manufacture of Air purification device having **photoactive** catalyst on optical fiber
INVENTOR(S): Inoue, Kiyoshi
PATENT ASSIGNEE(S): Toyo Element Industry Co., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001029784	A2	20010206	JP 1999-204543	19990719

PRIORITY APPLN. INFO.: JP 1999-204543 19990719

AB The method includes the step of fixing the catalyst particles on the side wall of optical fiber which has the increased light

transmittance from the side wall. The device is small and shows the improved catalytic efficiency.

IT **11099-06-2P**, Tetraethoxysilane homopolymer
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(method for fixing catalyst particles on side walls of optical fiber)

RN 11099-06-2 HCAPLUS
CN Silicic acid, ethyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 1343-98-2
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-17-5
CMF C2 H6 O

H_3C-CH_2-OH

IC ICM B01J021-06
ICS B01J035-02; B01J035-06; G02B006-00

CC **74-1** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 42, 67

ST manuf device **photoactive** catalyst optical fiber

IT **Coating process**
(laser-induced; method for manuf. of device having **photoactive** catalyst on optical fiber)

IT Optical fibers
(method for manuf. of device having **photoactive** catalyst on optical fiber)

IT Catalysts
(photochem., oxidn.; method for manuf. of device having **photoactive** catalyst on optical fiber)

IT 7550-45-0, Titanium tetrachloride, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(catalyst particles for device having **photoactive** catalyst on optical fiber)

IT **11099-06-2P**, Tetraethoxysilane homopolymer
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(method for fixing catalyst particles on side walls of optical fiber)

L51 ANSWER 10 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:715369 HCAPLUS
DOCUMENT NUMBER: 133:282745
TITLE: Multilayer materials having antisoiling, deodorant, and antibacterial titanium oxide films containing titanium peroxide, liquids for inner coating layers, and lamp shades using them
INVENTOR(S): Kashihara, Seiichi; Yokoyama, Masako

PATENT ASSIGNEE(S): Asahi Chemical Industry Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 10 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000280397	A2	20001010	JP 1999-367728	19991224
PRIORITY APPLN. INFO.:			JP 1999-20462 A	19990128

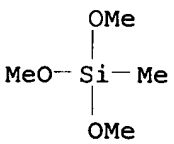
AB The materials have org. substrates, coating films from dispersions contg. anatase-type TiO2 and ti peroxide, and inner coating films which have high affinity for the substrates and become hydrophilic after drying, between the substrates and TiO2 films above. Thus, Delaglas A (acrylic resin sheet) was spray-coated with a soln. contg. MeSi(OMe)3 hydrolyzate and then with an aq. dispersion contg. anatase-type TiO2 and Ti peroxide to give a multilayer material showing good adhesion of the coating layers, weather resistance, photocatalytic **activity**, and **light** transmittance 95%.

IT **25498-03-7P**, Methyltrimethoxysilane homopolymer
172722-37-1P, Ethyl silicate-ethyltriethoxysilane copolymer
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(inner layer; laminated plastics having photocatalytic TiO2 films and hydrophilic inner layers for lamp shades)

RN 25498-03-7 HCAPLUS
CN Silane, trimethoxymethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

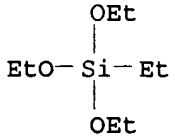
CRN 1185-55-3
CMF C4 H12 O3 Si



RN 172722-37-1 HCAPLUS
CN Silicic acid, ethyl ester, polymer with triethoxyethylsilane (9CI) (CA INDEX NAME)

CM 1

CRN 78-07-9
CMF C8 H20 O3 Si



CM 2

CRN 11099-06-2
CMF C2 H6 O . x Unspecified

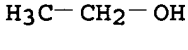
CM 3

CRN 1343-98-2
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 4

CRN 64-17-5
CMF C2 H6 O



IC ICM B32B009-00
ICS B01J021-06; B01J035-02; B05D007-02; B05D007-24; C08J007-04
CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): **74**
IT **Coating materials**
(antisoiling; laminated plastics having photocatalytic TiO2 films and hydrophilic inner layers for lamp shades)
IT **Coating materials**
(bactericidal; laminated plastics having photocatalytic TiO2 films and hydrophilic inner layers for lamp shades)
IT **25498-03-7P**, Methyltrimethoxysilane homopolymer
153315-80-1P, Methyltrimethoxysilane homopolymer, sru
172722-37-1P, Ethyl silicate-ethyltriethoxysilane copolymer
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(inner layer; laminated plastics having photocatalytic TiO2 films and hydrophilic inner layers for lamp shades)

L51 ANSWER 11 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:300424 HCAPLUS
DOCUMENT NUMBER: 132:309909
TITLE: Corrugated board having photolysis catalyst and deodoring part and apparatus using the catalyst
INVENTOR(S): Okami, Katsushi; Hioki, Shinya
PATENT ASSIGNEE(S): Mitsubishi Paper Mills, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000126609	A2	20000509	JP 1998-307052	19981028
PRIORITY APPLN. INFO.:			JP 1998-307052	19981028

AB The corrugated board has a sheet comprising a flexible photolysis catalyst substrate contg. **photoreactive** semiconductive material and a layer contg. an adsorbent on 1 side of the substrate, as a core and/or lining, and the side contg. the adsorbent is a layer for adhesion in the corrugated board. The deodorizing part has a cylinder made of the board by rounding along the direction crossing the direction of the glue pattern and the app. has a means of blowing air inside the cylinder and a **light** source for **activating** the catalyst. Thus, a slurry compn. of an aq. dispersion as 100 parts solids contg. a heat-bondable polyester fiber and kraft pulp and another aq. dispersion as 10 parts solids contg. TiO2 (P 25S6) was made into a nonwoven fabric-contg. sheet, which was coated with an aq. mixt. of activated C and an emulsion (Sumikaflex 900) on 1 side and the resulted sheet as the lining and a photocatalyst sheet (PM-IN-CD) the core were made into the corrugated board. The deodorizing app. made of the board showed deodorant effect against MeCHO.

IT **11099-06-2**, Ethyl silicate
RL: DEV (Device component use); USES (Uses)
(in corrugated board supporting photolysis catalyst and adsorbent in lining for deodorizing part and app.)

RN 11099-06-2 HCAPLUS
CN Silicic acid, ethyl ester (9CI) (CA INDEX NAME)

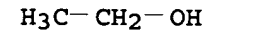
CM 1

CRN 1343-98-2
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-17-5
CMF C2 H6 O



IC ICM B01J035-02
ICS A61L009-20; B01D053-86; B01J035-04; B01J035-06; F24F001-00

CC 43-7 (Cellulose, Lignin, Paper, and Other Wood Products)
Section cross-reference(s): 40, 67, **74**

IT **Coating materials**
(linings; corrugated board supporting photolysis catalyst and adsorbent in lining for deodorizing part and app.)

IT **11099-06-2**, Ethyl silicate 196966-29-7, KE 316
RL: DEV (Device component use); USES (Uses)
(in corrugated board supporting photolysis catalyst and adsorbent in lining for deodorizing part and app.)

L51 ANSWER 12 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:116405 HCAPLUS
DOCUMENT NUMBER: 132:144399
TITLE: Underlayer for electrophotographic photoreceptor, method for formation thereof, and method for manufacture of photoreceptor therewith
INVENTOR(S): Nishimori, Hideki; Hashimoto, Akira
PATENT ASSIGNEE(S): Showa Aluminium Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

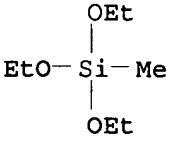
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000047415	A2	20000218	JP 1998-213654	19980729

PRIORITY APPLN. INFO.: JP 1998-213654 19980729

AB The underlayer on a conductive support for a **light-sensitive** layer of an electrophotog. photoreceptor is made from SiO2 according to a sol-gel method, wherein the underlayer consists of a compact layer and a finely indented layer. The underlayer prevents the generation of interference fringes.
IT **25930-91-0P**, Methyltriethoxysilane homopolymer
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(underlayer for electrophotog. photoreceptor)
RN 25930-91-0 HCAPLUS
CN Silane, triethoxymethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 2031-67-6
CMF C7 H18 O3 Si



IC ICM G03G005-14
ICS G03G005-14
CC **74-3** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 42

IT **Coating materials**
Electrophotographic photoconductors (photoreceptors)
(underlayer for electrophotog. photoreceptor, method for formation thereof and for manuf. of photoreceptor therewith)

IT **25930-91-0P**, Methyltriethoxysilane homopolymer
153315-80-1P, Methyltriethoxysilane homopolymer sru
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(underlayer for electrophotog. photoreceptor)

L51 ANSWER 13 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:342605 HCAPLUS
DOCUMENT NUMBER: 131:37756
TITLE: Manufacture of photographic film with antistatic coating
INVENTOR(S): Kim, Song-Soo; Im, Dae-Woo; Kim, Jyun-Ra; Biet, Vielprede; Roess, Christoph; Tiel, Dietoto
PATENT ASSIGNEE(S): Saihan Industries Incorporation, S. Korea
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11143022	A2	19990528	JP 1997-303254	19970930
PRIORITY APPLN. INFO.:			JP 1997-303254	19970930

AB The film is manufd. by a process including following steps; (1) corona discharge treating or applying water-sol. coating based on water-sol acrylic polymers and vinylidene chloride-contg. polymers on the both sides of a film, (2) forming a permanent antistatic layer and an antihalation layer on 1 side, and (3) forming a gelatin layer, a **photosensitive** layer, and a protective layer on the other side. The permanent antistatic coating contains (a) acrylic polymers or gelatin, (b) anionic polymer having [CH(R3)C(R2)(CO2H)]x[CH2CH(Z)]yM (R2 = H, C1-5 alkyl; R3 = H, carboxylic acid, C1-10 alkyl; M = Na, Li, K, Ca, Mg; Z = C6H4SO3-, R4NHCH2SO3-), and (c) (RO)3Si(CH2)nA and/or (R1O)4Si (R, R1 = Me, Et) as hardeners. The antistatic coating layer showed improved adhesive strength.

IT **227012-20-6P**, γ-Mercaptopropyltriethoxysilane-Rhoplex EXP 3208-Versa TL 4 copolymer **227012-21-7P**, γ-Mercaptopropyltriethoxysilane-Rhoplex EXP 3208-trimethoxysilane-Versa TL 4 copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(coating; photog. film having antistatic coating contg. anionic polymers, alkoxysilane hardeners, and acrylic polymers or gelatin with improved adhesive strength)

RN 227012-20-6 HCAPLUS
CN 1-Propanethiol, 3-(triethoxysilyl)-, polymer with Rhoplex EXP 3208

and Versa TL 4 (9CI) (CA INDEX NAME)

CM 1

CRN 227011-74-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

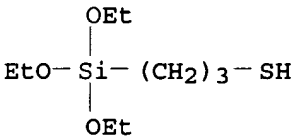
CM 2

CRN 90093-47-3
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 3

CRN 14814-09-6
CMF C9 H22 O3 S Si



RN 227012-21-7 HCAPLUS
CN 1-Propanethiol, 3-(triethoxysilyl)-, polymer with Rhoplex EXP 3208, trimethoxysilane and Versa TL 4 (9CI) (CA INDEX NAME)

CM 1

CRN 227011-74-7
CMF Unspecified
CCI PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

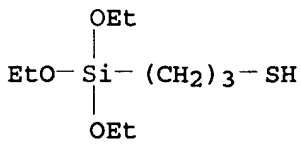
CM 2

CRN 90093-47-3
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

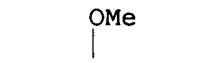
CM 3

CRN 14814-09-6
CMF C9 H22 O3 S Si



CM 4

CRN 2487-90-3
CMF C3 H10 O3 Si



IC ICM G03C001-89
ICS C09C001-00; C09C003-00; C09D189-00; C08J007-04; C09D125-18; C09D127-06; C09D133-02; C09D139-00; C09D183-04
CC **74-2** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 42
IT **Coating materials**
(antistatic; photog. film having antistatic coating contg. anionic polymers, alkoxysilane hardeners, and acrylic polymers or gelatin with improved adhesive strength)
IT **227012-20-6P**, γ-Mercaptopropyltriethoxysilane-Rhoplex EXP 3208-Versa TL 4 copolymer **227012-21-7P**, γ-Mercaptopropyltriethoxysilane-Rhoplex EXP 3208-trimethoxysilane-Versa TL 4 copolymer
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(coating; photog. film having antistatic coating contg. anionic polymers, alkoxysilane hardeners, and acrylic polymers or gelatin with improved adhesive strength)

L51 ANSWER 14 OF 14 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:851980 HCAPLUS
DOCUMENT NUMBER: 123:242131
TITLE: **Photosensitive** composition and waterless lithographic printing platemaking using it
INVENTOR(S): Akyama, Takeo; Sasa, Nobumasa
PATENT ASSIGNEE(S): Konishiroku Photo Ind, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07199478	A2	19950804	JP 1994-570	199401

PRIORITY APPLN. INFO.: JP 1994-570 07
199401
07

AB The title compn. comprises a silicone resin contg. tert-Bu side chain and a photoacid generator. The plate showed scratch resistant characteristics.

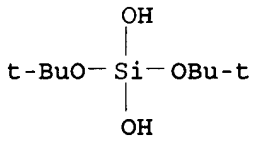
IT **168906-37-4 168906-37-4D**, trimethylsilyl-terminated
RL: DEV (Device component use); USES (Uses)
(**photosensitive** compn. comprising)

RN 168906-37-4 HCAPLUS

CN Silicic acid (H4SiO4), bis(1,1-dimethylethyl) ester, polymer with dimethylsilanediol (9CI) (CA INDEX NAME)

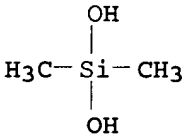
CM 1

CRN 2916-45-2
CMF C8 H20 O4 Si



CM 2

CRN 1066-42-8
CMF C2 H8 O2 Si

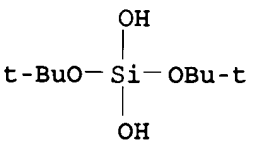


RN 168906-37-4 HCAPLUS

CN Silicic acid (H4SiO4), bis(1,1-dimethylethyl) ester, polymer with dimethylsilanediol (9CI) (CA INDEX NAME)

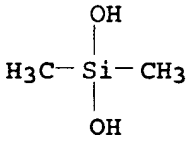
CM 1

CRN 2916-45-2
CMF C8 H20 O4 Si



CM 2

CRN 1066-42-8
CMF C2 H8 O2 Si



IC ICM G03F007-075
ICS G03F007-00; G03F007-004; G03F007-028; G03F007-34; G03F007-38
CC **74-6** (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST **photosensitive** compn waterless lithog printing plate
IT Siloxanes and Silicones, uses
RL: DEV (Device component use); USES (Uses)
(**photosensitive** compn. comprising)
IT **Coating materials**
(**light-sensitive, photosensitive** compn. and waterless lithog. printing plate using it)
IT Printing plates
(**photosensitive, photosensitive** compn. and waterless lithog. printing plate using it)
IT Lithographic plates
(waterless, **photosensitive** compn. and waterless lithog. printing plate using it)
IT **168906-37-4 168906-37-4D**, trimethylsilyl-terminated
RL: DEV (Device component use); USES (Uses)
(**photosensitive** compn. comprising)

=> d l52 ibib abs hitstr hitind 1-15

L52 ANSWER 1 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:58446 HCAPLUS
DOCUMENT NUMBER: 142:144075
TITLE: Developing solution for **photosensitive** composition and method for forming patterned resist film
INVENTOR(S): Nagahara, Tatsuro; Mutoh, Tadashi; Hayashi, Masanobu
PATENT ASSIGNEE(S): Clariant International Ltd., Switz.; Clariant Japan K.K.
SOURCE: PCT Int. Appl., 25 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005006083	A1	20050120	WO 2004-JP7706	

200406
03

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA,
CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP,
KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD,
SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW,
AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ,
DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL,
PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG

EP 1650605 A1 20060426 EP 2004-745562
200406
03

R: DE, FR, IT

PRIORITY APPLN. INFO.: JP 2003-196451 A
200307
14

WO 2004-JP7706 W
200406
03

OTHER SOURCE(S): MARPAT 142:144075

AB A developing soln. for use in developing a **photosensitive** compn., which comprises a compd. having a **hydrophilic** group selected from the group consisting of an amine-N-oxide group, a sulfonic acid salt group, sulfuric acid salt group, a carboxylic acid salt group and a phosphoric acid group. The developing soln. is used for developing, in particular, a **photosensitive** compn. contg. a polymer having silicon; and a method for forming a pattern which uses the developing soln. The developing soln. can be used for developing a **photosensitive** compn. with ease and simplicity, while retaining satisfactory sensitivity and resoln.

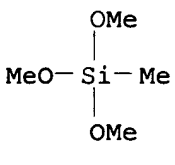
IT **25498-03-7**, Methyltrimethoxysilane homopolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(photoresist; developing soln. for **photosensitive** compn. and method for forming patterned resist film)

RN 25498-03-7 HCAPLUS

CN Silane, trimethoxymethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 1185-55-3
CMF C4 H12 O3 Si



IC ICM G03F007-32

CC 74-5 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

Section cross-reference(s): 76
IT Photoresists
(developing soln. for **photosensitive** compn. and method for forming patterned resist film)
IT Silsesquioxanes
RL: TEM (Technical or engineered material use); USES (Uses)
(photoresist; developing soln. for **photosensitive** compn. and method for forming patterned resist film)
IT 77-92-9, Citric acid, uses 631-61-8, Ammonium acetate 1184-78-7, Trimethylamineoxide 1643-20-5, Lauryldimethylamineoxide 3332-27-2, Myristyl dimethyl amine oxide 25155-30-0, Sodium dodecylbenzenesulfonate 26248-87-3, Tris(monochloropropyl)phosphate 26838-05-1, Disodium lauryl sulfosuccinate 32612-48-9, Polyoxyethylenelaurylether ammonium sulfate 61792-31-2, Laurylamidopropyldimethylamineoxide 150138-85-5, Antifoam E 20
RL: TEM (Technical or engineered material use); USES (Uses)
(developing soln. for **photosensitive** compn. and method for forming patterned resist film)
IT **25498-03-7**, Methyltrimethoxysilane homopolymer 153315-80-1
RL: TEM (Technical or engineered material use); USES (Uses)
(photoresist; developing soln. for **photosensitive** compn. and method for forming patterned resist film)
REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 2 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:95578 HCAPLUS
DOCUMENT NUMBER: 140:136459
TITLE: Laser-sensitive lithographic plate with **hydrophilic** layer containing filler
INVENTOR(S): Inno, Norifumi; Tashiro, Hiroshi
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 43 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004034401	A2	20040205	JP 2002-192214	20020701
PRIORITY APPLN. INFO.:			JP 2002-192214	20020701

AB The plate comprises a support successively coated with a light-to-heat converting layer and a **hydrophilic** layer contg. a filler and a **hydrophilic** binder. The plate is recored by laser scanning exposure, gives printing plate by easy development or without development, and shows good printing durability, image reproducibility, and stain prevention.
IT **11099-06-2**, Tetraethoxysilane homopolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(**hydrophilic** layer contg.; laser-sensitive lithog. plate comprising light-to-heat converting layer and

hydrophilic layer)
RN 11099-06-2 HCAPLUS
CN Silicic acid, ethyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 1343-98-2
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-17-5
CMF C2 H6 O

H_3C-CH_2-OH

IC ICM B41N001-14
ICS G03F007-00; G03F007-004; G03F007-11
CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST laser **sensitive** lithog plate **light** heat converting layer; filler **hydrophilic** binder lithog plate
IT Carbon black, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(MA 100, light-to-heat converting layer; laser-sensitive lithog. plate comprising light-to-heat converting layer and **hydrophilic** layer)
IT Lithographic plates
(laser-sensitive lithog. plate comprising light-to-heat converting layer and **hydrophilic** layer)
IT 1344-28-1, Alumina, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(Alumina White A, filler, **hydrophilic** layer contg.; laser-sensitive lithog. plate comprising light-to-heat converting layer and **hydrophilic** layer)
IT 1309-42-8, Starbrand 200 1314-13-2, Finex 50, uses 12047-27-7, Barium titanate, uses 12054-48-7, Nickel hydroxide 12060-59-2, Strontium titanate 42765-12-8, Titanium hydroxide (Ti(OH)2)
RL: TEM (Technical or engineered material use); USES (Uses)
(filler, **hydrophilic** layer contg.; laser-sensitive lithog. plate comprising light-to-heat converting layer and **hydrophilic** layer)
IT 4420-74-0DP, 3-Mercaptopropyltrimethoxysilane, reaction products with polyacrylamide 9003-05-8DP, Polyacrylamide, reaction products with mercaptopropyltrimethosyxilane
RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**hydrophilic** layer contg.; laser-sensitive lithog. plate comprising light-to-heat converting layer and **hydrophilic** layer)
IT 9002-89-5, PVA 117 **11099-06-2**, Tetraethoxysilane homopolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(**hydrophilic** layer contg.; laser-sensitive lithog. plate comprising light-to-heat converting layer and

hydrophilic layer)

L52 ANSWER 3 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:391824 HCAPLUS
DOCUMENT NUMBER: 136:403265
TITLE: Visible light-corresponding coatings, their films and products therewith
INVENTOR(S): Sugihara, Shinichi
PATENT ASSIGNEE(S): Ecodevice Laboratory Co., Ltd., Japan
SOURCE: PCT Int. Appl., 56 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002040609	A1	20020523	WO 2001-JP10037	200111 16
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2002014312	A5	20020527	AU 2002-14312	200111 16
EP 1285953	A1	20030226	EP 2001-982823	200111 16
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 3454817	B2	20031006	JP 2002-543608	200111 16
US 2003166765	A1	20030904	US 2002-169739	200211 08
JP 2004027193	A2	20040129	JP 2003-71663	200303 17
PRIORITY APPLN. INFO.:			JP 2000-351560 A	200011 17
			JP 2002-543608 A3	200111 16
			WO 2001-JP10037 W	200111

AB Title coatings, useful for various substrates, comprise binders, anatase TiO2-based visible light-corresponding materials, and solvents and show an ESR spectrum having a primary signal with g value of 2.004-2.007 and two secondary signals with g value of 1.985-1.986 and 2.024, resp., measured under ≥420-nm light irradn. in vacuo at 77 °K and having slightly or substantially no signals under dark area in vacuo at 77 °K. A coating comprising 9.8-g anatase TiO2 (having the 3 signals described above; prepd. from TiCl4), 0.7-g Voncoat 6290, and 24.8-mL water showed NO removal ability 7.8% at 470 nm (1-ppm NO-contg. air, 0% relative humidity); other coatings contg. alkoxysilane binder and anatase TiO2 showed good antimicrobial ability.

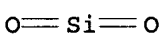
IT **177860-71-8**, Methyltrimethoxysilane-silica copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(binder; visible light-corresponding anatase TiO2-contg. coatings with various properties)

RN 177860-71-8 HCAPLUS

CN Silane, trimethoxymethyl-, polymer with silica (9CI) (CA INDEX NAME)

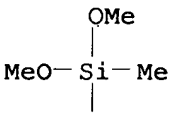
CM 1

CRN 7631-86-9
CMF O2 Si



CM 2

CRN 1185-55-3
CMF C4 H12 O3 Si



IC ICM C09D201-00
ICS C09D001-00; C09D005-16; C09D007-12; B01J021-06; B01J035-02

CC 42-10 (Coatings, Inks, and Related Products)
Section cross-reference(s): 5

ST visible light corresponding coating anatase titania; nitrogen monoxide removal anatase titania coating; antimicrobial coating anatase titania; weather resistance coating anatase titania; **hydrophilic** coating anatase titania

IT 7440-44-0, Carbon, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**active**, binder; visible **light**-corresponding anatase TiO2-contg. coatings with various properties)

IT 1305-78-8, Calcium oxide, uses 1344-09-8, Water glass 1344-28-1, Alumina, uses 7631-86-9, Silica, uses 7722-88-5, Sodium pyrophosphate 7758-29-4, Sodium tripolyphosphate 7779-90-0, Zinc

phosphate 7784-30-7, Aluminum phosphate 9003-08-1, Melamine resin 13397-24-5, Gypsum, uses 14986-84-6, Sodium tetrapolyphosphate 99251-68-0, Lumiflon LF 200C 148619-47-0, Voncoat 6290 165943-52-2, JSR T 2202A 165943-53-3, JSR T 2202B **177860-71-8**, Methyltrimethoxysilane-silica copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(binder; visible light-corresponding anatase TiO2-contg. coatings with various properties)

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L52 ANSWER 4 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:207494 HCAPLUS
DOCUMENT NUMBER: 136:239131
TITLE: Lithographic original plate, manufacture of lithographic plate, and printing method
INVENTOR(S): Inno, Norifumi; Maemoto, Kazuo
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 26 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2002079772	A2	20020319	JP 2000-268673	20000905
PRIORITY APPLN. INFO.:			JP 2000-268673	20000905

AB The original plate comprises a plastic substrate coated with a **hydrophilic** layer and a heat-sensitive layer contg. microcapsules contg. compds. having heat-reactive functional groups. The plate is imagewise irradiated with a laser beam after or before equipped to a printing machine and directly printed. Non-image part of the plate is removed easily on the printing machine and the plate shows high sensitivity, printing durability, and gives clear images without stain.

IT **11099-06-2**, Tetraethoxysilane homopolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(**hydrophilic** layer; direct imaging lithog. plate with **hydrophilic** layer and **photosensitive** layer contg. microcapsules)

RN 11099-06-2 HCAPLUS
CN Silicic acid, ethyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 1343-98-2
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-17-5
CMF C2 H6 O

IC ICM B41N001-14
ICS B41C001-055; G03F007-00; G03F007-004; G03F007-11
CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST lithog plate microcapsule heat sensitive compd; **hydrophilic** layer lithog plate direct printing
IT Lithographic plates
(direct imaging lithog. plate with **hydrophilic** layer and **photosensitive** layer contg. microcapsules)
IT 7631-86-9, Snowtex C, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(colloidal, **hydrophilic** layer; direct imaging lithog. plate with **hydrophilic** layer and **photosensitive** layer contg. microcapsules)
IT 822-06-0, Hexamethylene diisocyanate 4098-71-9, Isophorone diisocyanate 4206-61-5, Diethylene glycol diglycidyl ether 15625-89-5, Trimethylolpropane triacrylate 25854-16-4, Xylylene diisocyanate 30528-89-3, Allyl methacrylate-butyl methacrylate copolymer 30674-80-7 37275-47-1, Trimethylolpropane diacrylate 37337-02-3, Takenate D 110N 61488-62-8, Allyl methacrylate-butyl acrylate copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(direct imaging lithog. plate with **hydrophilic** layer and **photosensitive** layer contg. microcapsules)
IT **11099-06-2**, Tetraethoxysilane homopolymer 13463-67-7, Titania, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**hydrophilic** layer; direct imaging lithog. plate with **hydrophilic** layer and **photosensitive** layer contg. microcapsules)

L52 ANSWER 5 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:788576 HCAPLUS
DOCUMENT NUMBER: 135:336951
TITLE: Heat-sensitive lithographic original plates
INVENTOR(S): Kita, Nobuyuki
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001301347	A2	20011031	JP 2000-115421	200004 17

PRIORITY APPLN. INFO.: JP 2000-115421

200004
17

AB The plate comprises the plastic support with 0.1-1.0 μm centerline av. surface roughness having thereon (A) a hydrophobic adhesive layer, (B) a **hydrophilic** layer contg. hot melt hydrophobic particles and a **hydrophilic** polymer binder, and (C) an overcoat layer in succession, ≥1 of which contains a light to heat converting agent. The plate gives printing plate without processing after light exposure and the printing plate shows good printing durability.

IT **11099-06-2**, Tetraethoxysilane homopolymer
RL: DEV (Device component use); USES (Uses)
(heat-sensitive lithog. original plates contg. light-heat converting agent)

RN 11099-06-2 HCAPLUS

CN Silicic acid, ethyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 1343-98-2
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-17-5
CMF C2 H6 O

H_3C-CH_2-OH

IC ICM B41N001-14
ICS B41N003-04; G03F007-00; G03F007-004; G03F007-09; G03F007-11

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST heat **sensitive** lithog plate **light** heat conversion; surface roughness plastic support lithog plate

IT 7631-86-9, Snowtex O, uses
RL: DEV (Device component use); USES (Uses)
(colloidal, **hydrophilic** layer contg.; heat-sensitive lithog. original plates contg. light-heat converting agent)

IT **11099-06-2**, Tetraethoxysilane homopolymer 122463-72-3, PVA 205 134127-48-3 289893-03-4
RL: DEV (Device component use); USES (Uses)
(heat-sensitive lithog. original plates contg. light-heat converting agent)

IT 9003-53-6, Polystyrene 9011-14-7, Poly(methyl methacrylate)
RL: DEV (Device component use); USES (Uses)
(**hydrophilic** layer contg.; heat-sensitive lithog. original plates contg. light-heat converting agent)

L52 ANSWER 6 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:741296 HCAPLUS
DOCUMENT NUMBER: 135:310952
TITLE: Lithographic printing plate precursor directly imaged in scanning heat-mode

INVENTOR(S): Hoshi, Satoshi; Fukino, Kiyotaka; Waki, Kokichi
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 34 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
JP 2001281852	A2	20011010	JP 2000-141482		200005 15
US 2001036592	A1	20011101	US 2001-756920		200101 10
US 6686125	B2	20040203			
PRIORITY APPLN. INFO.:			JP 2000-16040	A	200001 25
			JP 2000-6968	A	200001 14
			JP 2000-141482	A	200005 15

AB The title printing plate precursor has a light-to-heat converting layer contg. a light-to-heat converting agent and a **hydrophilic light-sensitive** layer on a support, wherein the **light-sensitive** layer contains **light**-to-heat converting metal particles, which becomes hydrophobic by light irradn., and a **hydrophilic** compd. becoming hydrophobic by light irradn. The printing plate precursor, which has a heat-generating layer and a **light-sensitive** layer, provides a printing plate of the good contrast between an image area and a non-image area, the good printing durability, and a good inking properties.

IT **11099-06-2P**, Tetraethoxysilane homopolymer
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**light-sensitive** layer in lithog. printing plate precursor)

RN 11099-06-2 HCAPLUS
CN Silicic acid, ethyl ester (9CI) (CA INDEX NAME)

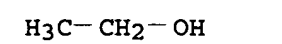
CM 1

CRN 1343-98-2
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-17-5
CMF C2 H6 O



IC ICM G03F007-004
ICS G03F007-004; B41N001-14; G03F007-00; G03F007-11
CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT Polyurethanes, preparation
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**light-sensitive** layer in lithog. printing plate precursor)
IT 7631-86-9P, Snowtex C, preparation
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(colloidal; **light-sensitive** layer in lithog. printing plate precursor)
IT 9017-44-1P, styrene-divinylbenzene-hydroxyethyl methacrylate copolymer **11099-06-2P**, Tetraethoxysilane homopolymer 26141-88-8P, Glycidylmethacrylate/methyl methacrylate copolymer 26949-20-2P, Styrene/Trimethoxysilylpropyl methacrylate copolymer 89277-66-7P, styrene/divinylbenzene/Trimethoxysilylpropyl methacrylate copolymer 164725-68-2P, xylene diisocyanate/ Takenate D 110N copolymer 365972-02-7P, Styrene-divinylbenzene-acrylic acid-acrylamide block copolymer 365972-03-8P, styrene/divinylbenzene/acrylic acid/ethyleneglycol diacrylate block copolymer 365972-04-9P
RL: SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**light-sensitive** layer in lithog. printing plate precursor)
IT 1344-28-1, Alumina, uses
RL: TEM (Technical or engineered material use); USES (Uses)
(**light-sensitive** layer in lithog. printing plate precursor)

L52 ANSWER 7 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:566671 HCAPLUS
DOCUMENT NUMBER: 135:138776
TITLE: Manufacture of ink-jet recording head with water-repellant **photosensitive** resin layers
INVENTOR(S): Shimomura, Akihiko
PATENT ASSIGNEE(S): Canon Kabushiki Kaisha, Japan
SOURCE: U.S. Pat. Appl. Publ., 6 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2001010304	A1	20010802	US 2000-737590	200012

18

US 6638439 B2 20031028
PRIORITY APPLN. INFO.: JP 1999-360412 A 199912
20

AB When liq. for recording such as ink is accumulated around ejection ports deviations in ejecting (flying) directions of ink droplets ejected from ejection ports in an ink-jet recording head are obsd. so that recording results of high quality can not be attained any more. Water-repellent treatments on the recording head can prevent such deviations. A simple and low cost manufg. method of such an ink-jet recording head characterized by forming ejection ports and water-repellent treated areas simultaneously by one patterning procedure comprising steps of: forming a resin layer for ejection ports out of an energy active ray curing material, curing portions of the resin layer to be **hydrophilic** except ejection ports irradiating the energy active ray, applying a water-repellent **photosensitive** resin curable by the energy active ray on the cured resin layer and irradiating energy active ray for curing portions of the applied water-repellent **photosensitive** resin layer corresponding to the ejection ports and the inner and the resin layer for the ejection ports.

IT **351529-93-6P 351529-94-7P**
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(manuf. of ink-jet recording head with water-repellent **photosensitive** resin layers)

RN 351529-93-6 HCAPLUS
CN 1,4-Benzenedimethanol, α,α,α',α'-tetrakis(trifluoromethyl)-, polymer with α-hydro-ω-hydroxypoly[oxy(oxiranyl-1,2-cyclohexanediyl)] ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1) and trimethoxy[3-(oxiranylmethoxy)propyl]silane (9CI) (CA INDEX NAME)

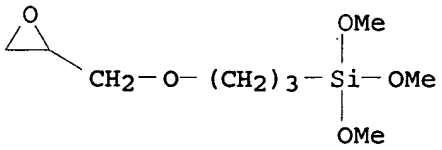
CM 1

CRN 244772-00-7
CMF (C8 H12 O2)n (C8 H12 O2)n (C8 H12 O2)n C6 H14 O3
CCI IDS, PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

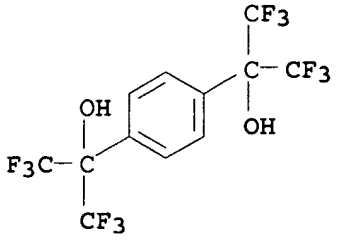
CM 2

CRN 2530-83-8
CMF C9 H20 O5 Si



CM 3

CRN 1992-15-0
CMF C12 H6 F12 O2



RN 351529-94-7 HCAPLUS
CN 1,4-Benzenedimethanol, α,α,α',α'-tetrakis(trifluoromethyl)-, polymer with Cheminox AFEP, α-hydro-ω-hydroxypoly[oxy(oxiranyl-1,2-cyclohexanediyl)] ether with 2-ethyl-2-(hydroxymethyl)-1,3-propanediol (3:1), [[(3,3,4,4,5,5,6,6,7,7,8,8,8-tridecafluorooctyl)oxy]methyl]oxirane and trimethoxy[3-(oxiranylmethoxy)propyl]silane (9CI) (CA INDEX NAME)

CM 1

CRN 351529-92-5
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

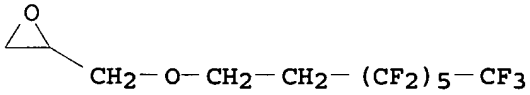
CM 2

CRN 244772-00-7
CMF (C8 H12 O2)n (C8 H12 O2)n (C8 H12 O2)n C6 H14 O3
CCI IDS, PMS, MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

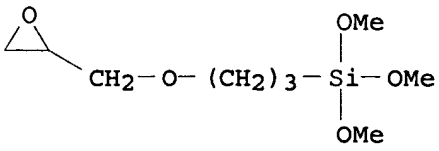
CM 3

CRN 122193-68-4
CMF C11 H9 F13 O2



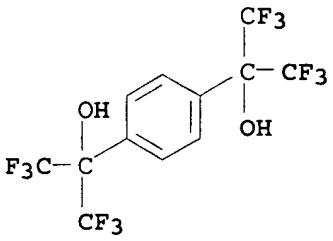
CM 4

CRN 2530-83-8
CMF C9 H20 O5 Si



CM 5

CRN 1992-15-0
CMF C12 H6 F12 O2



IC ICM G11B005-127
ICS G01D015-00
INCL 216027000
CC 42-9 (Coatings, Inks, and Related Products)
ST inkjet recording head water repellent **photosensitive** coating
IT Coating materials
(**light-sensitive**; manuf. of ink-jet recording head with water-repellent **photosensitive** resin layers)
IT Ink-jet printer heads
(manuf. of ink-jet recording head with water-repellent **photosensitive** resin layers)
IT Coating materials
(water-resistant; manuf. of ink-jet recording head with water-repellent **photosensitive** resin layers)
IT **351529-93-6P 351529-94-7P**
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(manuf. of ink-jet recording head with water-repellent **photosensitive** resin layers)
IT 25988-32-3, Polymethyl-isopropenylketone
RL: POF (Polymer in formulation); TEM (Technical or engineered material use); USES (Uses)
(manuf. of ink-jet recording head with water-repellent **photosensitive** resin layers)

L52 ANSWER 8 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:143823 HCAPLUS
DOCUMENT NUMBER: 134:200552
TITLE: Lithographic original plate and manufacture of lithographic plate
INVENTOR(S): Kasai, Kiyoshi
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2001056551	A2	20010227	JP 2000-173748	20000609
US 6723492	B1	20040420	US 2000-591207	20000609
PRIORITY APPLN. INFO.:			JP 1999-162659 A	19990609

AB The original plate comprises a water-resistant support coated with a **photosensitive** layer contg. Ti oxide fine particles which absorbs visible light, an org. metal polymer prepd. by hydrolytic polymn. of R0nMYx-n(R0 = H, hydrocarbyl, heterocycle; Y = reactive group; M = metal with 3-6 valences; x - n ≥2; n = 0-6) and an org. polymer which forms a hydrogen bond with the org. metal polymer. The original plate is imagewise exposed to visible ray to change the exposed part to **hydrophilic** for forming a non-image part, and the lipophilic unexposed area forms an image part. The obtained lithog. plate is also claimed. The plate is repeatedly used by the steps of (1) removing the printing ink from the plate after printing, (2) heating the **photosensitive** layer for changing the **hydrophilic** part to hydrophobic to form the original plate, and (3) forming the printing plate by the above method. The plate gives clear images without liq. treatment.

IT **11099-06-2P**, Tetraethoxysilane homopolymer
25498-03-7P, Methyltrimethoxysilane homopolymer
153233-53-5P, Trimethoxysilane homopolymer
273735-07-2P, 3-Sulfopropyltrimethoxysilane-tetraethoxysilane copolymer
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(lithog. original plate contg. titania, org. metal polymer, and org. polymer)

RN 11099-06-2 HCAPLUS
CN Silicic acid, ethyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 1343-98-2
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

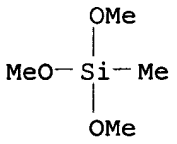
CM 2

CRN 64-17-5
CMF C2 H6 O

RN 25498-03-7 HCAPLUS
CN Silane, trimethoxymethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

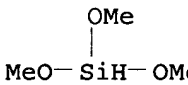
CRN 1185-55-3
CMF C4 H12 O3 Si



RN 153233-53-5 HCAPLUS
CN Silane, trimethoxy-, homopolymer (9CI) (CA INDEX NAME)

CM 1

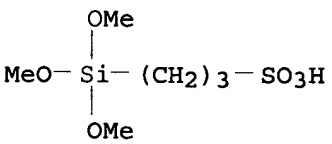
CRN 2487-90-3
CMF C3 H10 O3 Si



RN 273735-07-2 HCAPLUS
CN 1-Propanesulfonic acid, 3-(trimethoxysilyl)-, polymer with silicic acid (H4SiO4) tetraethyl ester (9CI) (CA INDEX NAME)

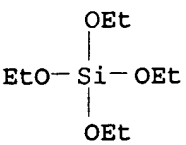
CM 1

CRN 79059-66-8
CMF C6 H16 O6 S Si



CM 2

CRN 78-10-4
CMF C8 H20 O4 Si



IC ICM G03F007-004
ICS G03F007-00; G03F007-032
CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
IT **11099-06-2P**, Tetraethoxysilane homopolymer 12002-26-5P, Tetramethoxysilane homopolymer **25498-03-7P**, Methyltrimethoxysilane homopolymer 51350-55-1P, Phenyltrimethoxysilane homopolymer, sru 89885-26-7P, Phenyltrimethoxysilane homopolymer **153233-53-5P**, Trimethoxysilane homopolymer 153315-80-1P, Methyltrimethoxysilane homopolymer, sru 153315-81-2P **273735-07-2P**, 3-Sulfopropyltrimethoxysilane-tetraethoxysilane copolymer
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(lithog. original plate contg. titania, org. metal polymer, and org. polymer)

L52 ANSWER 9 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:408937 HCAPLUS
DOCUMENT NUMBER: 133:60189
TITLE: **Hydrophilic** cured products, their manufacture, their laminates, and compositions therefor
INVENTOR(S): Sekiguchi, Manabu; Sugiyama, Naoki; Sato, Hozumi
PATENT ASSIGNEE(S): JSR Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 15 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000169755	A2	20000620	JP 1998-346707	19981207

PRIORITY APPLN. INFO.: JP 1998-346707 19981207

OTHER SOURCE(S): MARPAT 133:60189
AB Title products, showing a water-contact angle (Aw) of ≤10°, are prepd. from compns. comprising hydrolyzable silanes RnSiX4-n (R = C1-12 nonhydrolyzable org. group; X = hydrolyzable group; n = 0-3) and/or their hydrolyzates, **light**-inductive acidic **activators**, and photocatalysts by photochem. curing the compns. and treating the photocatalysts with radiation. A compn. comprising 30% (based on total solid) STS 01, 9% SP 171, and γ-

glycidoxypropyltrimethoxysilane-methyltrimethoxysilane copolymer showed good photocurability under air or N initially and after 3 mo at 40°. The above compn. was spread on a quartz plate, dried, UV-cured, and further irradiated with 1-mW/cm2 UV for 50 h to form a product showing Aw of <10°, pencil hardness 4 H, and good transparency (≥90%) and weather resistance.

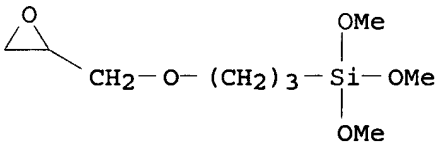
IT **156637-69-3P**, γ-Glycidoxypropyltrimethoxysilane-methyltrimethoxysilane copolymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(photocatalyst- and acidic activator-contg. photocurable polysiloxane coatings)

RN 156637-69-3 HCAPLUS

CN Silane, trimethoxymethyl-, polymer with trimethoxy[3-(oxiranylmethoxy)propyl]silane (9CI) (CA INDEX NAME)

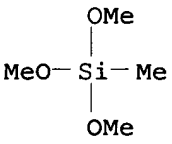
CM 1

CRN 2530-83-8
CMF C9 H20 O5 Si



CM 2

CRN 1185-55-3
CMF C4 H12 O3 Si



IC ICM C09D005-00
ICS C09D005-00; B01J035-02; B32B009-00; B32B027-00; C09D183-04

CC 42-10 (Coatings, Inks, and Related Products)

ST storage stability photocurability polysiloxane coating; **hydrophilicity** photocurable polysiloxane photocatalyst acidic activator

IT Coating materials
(**hydrophilic** coatings; photocatalyst- and acidic activator-contg. photocurable polysiloxane coatings)

IT **156637-69-3P**, γ-Glycidoxypropyltrimethoxysilane-methyltrimethoxysilane copolymer
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(photocatalyst- and acidic activator-contg. photocurable polysiloxane coatings)

L52 ANSWER 10 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:387254 HCAPLUS
DOCUMENT NUMBER: 133:36111
TITLE: Lithographic printing plate and its manufacture
INVENTOR(S): Kasai, Kiyoshi; Kato, Eiichi
PATENT ASSIGNEE(S): Fuji Photo Film Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2000158840	A2	20000613	JP 1999-271371	19990924
US 6258512	B1	20010710	US 1999-396851	19990915
US 38199	E	20030722	US 2002-92912	20020306
PRIORITY APPLN. INFO.:			JP 1998-271702 A	19980925
			US 1999-396851 A5	19990915

AB The plate, comprising a support having a **photosensitive** layer contg. an anatase-type Ti oxide, and a composite material contg. an organometallic polymer and an org. polymer having ≥1 of amide, urethane, ureide bonds, and OH group, is imagewise exposed to UV to convert the exposed **photosensitive** layer to be **hydrophilic.** The obtained lithog. plate is also claimed. The used lithog. plate is regenerated by (1) removing ink from the plate and (2) heat treating the plate to convert the exposed **hydrophilic** part to become hydrophobic. The plate is manufd. easily without wet development process and regenerated easily.

IT **11099-06-2P**, Tetraethoxysilane homopolymer
25498-03-7P, Methyltrimethoxysilane homopolymer
212716-32-0P, Tetramethoxysilane-trimethoxysilane copolymer
273735-07-2P, (3-Sulfopropyl)trimethoxysilane-tetraethoxysilane copolymer
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(lithog. plate having **photosensitive** layer contg. titania, silicon hydrolytic polymer, and org. polymer)

RN 11099-06-2 HCAPLUS
CN Silicic acid, ethyl ester (9CI) (CA INDEX NAME)

CM 1

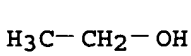
CRN 1343-98-2

CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

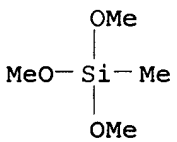
CRN 64-17-5
CMF C2 H6 O



RN 25498-03-7 HCAPLUS
CN Silane, trimethoxymethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

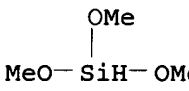
CRN 1185-55-3
CMF C4 H12 O3 Si



RN 212716-32-0 HCAPLUS
CN Silicic acid (H4SiO4), tetramethyl ester, polymer with trimethoxysilane (9CI) (CA INDEX NAME)

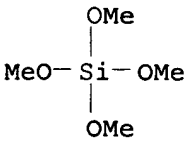
CM 1

CRN 2487-90-3
CMF C3 H10 O3 Si



CM 2

CRN 681-84-5
CMF C4 H12 O4 Si

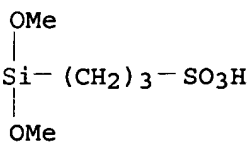


RN 273735-07-2 HCAPLUS

CN 1-Propanesulfonic acid, 3-(trimethoxysilyl)-, polymer with silicic acid (H4SiO4) tetraethyl ester (9CI) (CA INDEX NAME)

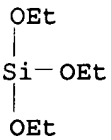
CM 1

CRN 79059-66-8
CMF C6 H16 O6 S Si



CM 2

CRN 78-10-4
CMF C8 H20 O4 Si



IC ICM B41N001-14
ICS B41C001-055; G03F007-00; G03F007-004
CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
Section cross-reference(s): 38
ST lithog plate titania **hydrophilic** surface; silicon hydrolytic polymer lithog plate; regeneration lithog plate
IT Lithographic plates
(lithog. plate having **photosensitive** layer contg. titania, silicon hydrolytic polymer, and org. polymer)
IT Gelatins, uses
Polyamines
Polyoxyalkylenes, uses
RL: DEV (Device component use); USES (Uses)
(lithog. plate having **photosensitive** layer contg. titania, silicon hydrolytic polymer, and org. polymer)
IT Silsesquioxanes
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(lithog. plate having **photosensitive** layer contg. titania, silicon hydrolytic polymer, and org. polymer)
IT 13463-67-7, Tipaque STS 02, uses
RL: CAT (Catalyst use); USES (Uses)
(ST 01, STS 01, STS 02; lithog. plate having **photosensitive** layer contg. titania, silicon hydrolytic polymer, and org. polymer)
IT 7631-86-9, Snowtex C, uses
RL: DEV (Device component use); USES (Uses)
(colloidal; lithog. plate having **photosensitive** layer contg. titania, silicon hydrolytic polymer, and org. polymer)

IT 13463-67-7, Tipaque STS 01, uses
RL: CAT (Catalyst use); USES (Uses)
(lithog. plate having **photosensitive** layer contg. titania, silicon hydrolytic polymer, and org. polymer)
IT 9003-05-8, Polyacrylamide 9003-20-7D, Polyvinyl acetate, sapond. 9003-39-8, Polyvinylpyrrolidone 25322-68-3, Poly(ethylene glycol) 26950-95-8, Poly(N-Butanoylaziridine) 122463-72-3, PVA 205 175069-12-2, PVA 405 273917-51-4, Penon F 3
RL: DEV (Device component use); USES (Uses)
(lithog. plate having **photosensitive** layer contg. titania, silicon hydrolytic polymer, and org. polymer)
IT **11099-06-2P**, Tetraethoxysilane homopolymer 12002-26-5P, Tetramethoxysilane homopolymer **25498-03-7P**, Methyltrimethoxysilane homopolymer 51350-55-1P, Phenyltrimethoxysilane homopolymer, sru 89885-26-7P, Phenyltrimethoxysilane homopolymer 153315-80-1P, Methyltrimethoxysilane homopolymer, sru **212716-32-0P**, Tetramethoxysilane-trimethoxysilane copolymer **273735-07-2P**, (3-Sulfopropyl)trimethoxysilane-tetraethoxysilane copolymer
RL: DEV (Device component use); PNU (Preparation, unclassified); PREP (Preparation); USES (Uses)
(lithog. plate having **photosensitive** layer contg. titania, silicon hydrolytic polymer, and org. polymer)
IT 1344-28-1, Alumina, uses
RL: DEV (Device component use); USES (Uses)
(sol; lithog. plate having **photosensitive** layer contg. titania, silicon hydrolytic polymer, and org. polymer)

L52 ANSWER 11 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:681403 HCAPLUS
DOCUMENT NUMBER: 131:311762
TITLE: Soiling-resistant coating compositions
INVENTOR(S): Noguchi, Junko; Eguchi, Yushi; Okura, Takuya; Yuasa, Motokazu
PATENT ASSIGNEE(S): Sekisui Chemical Co. Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11293031	A2	19991026	JP 1998-96170	19980408

PRIORITY APPLN. INFO.: JP 1998-96170 19980408

AB A soiling-resistant coating compn. for buildings and objects on the roads comprises titanium oxide as **photosensitive** catalyst and an org.-inorg. composite binder contg. **hydrophilic** org. groups selected from alc. hydroxy group, carboxy group and its salts, amide group, sulfonic acid or salts, phosphoric acid, its salts, or esters, and polyethylene glycol residue. The composite binder is obtained by the condensation of **hydrophilic** org. functional group-contg. alkoxysilyl compds. and tetra-functionalized

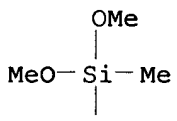
alkoxysilyl compds. in a ratio of 20:80 to 80:20.

IT **25498-03-7P**, Methyltrimethoxysilane homopolymer
163004-18-0P 184245-59-8P
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(soiling-resistant coating compns.)

RN 25498-03-7 HCAPLUS
CN Silane, trimethoxymethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

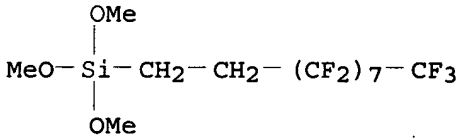
CRN 1185-55-3
CMF C4 H12 O3 Si



RN 163004-18-0 HCAPLUS
CN Silicic acid (H4SiO4), tetraethyl ester, polymer with (3,3,4,4,5,5,6,6,7,7,8,8,9,9,10,10,10-heptadecafluorodecyl)trimethoxysilane (9CI) (CA INDEX NAME)

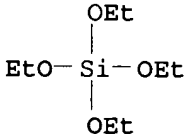
CM 1

CRN 83048-65-1
CMF C13 H13 F17 O3 Si



CM 2

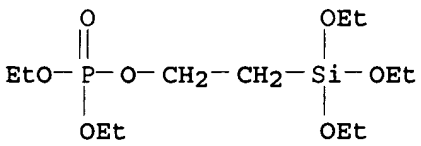
CRN 78-10-4
CMF C8 H20 O4 Si



RN 184245-59-8 HCAPLUS
CN Phosphoric acid, diethyl 2-(triethoxysilyl)ethyl ester, polymer with silicic acid (H4SiO4) tetraethyl ester (9CI) (CA INDEX NAME)

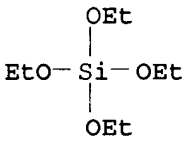
CM 1

CRN 82887-05-6
CMF C12 H29 O7 P Si



CM 2

CRN 78-10-4
CMF C8 H20 O4 Si



IC ICM C08K003-22
ICS B32B009-00; C08F002-52
CC 42-10 (Coatings, Inks, and Related Products)
IT 78-10-4DP, Tetraethoxysilane, polymers with **hydrophilic** group-contg. triethoxysilane derivs. 9002-88-4DP, Polyethylene, reaction products with triethoxysilylpropyl isocyanate, polymers with tetraethoxysilane 24801-88-5DP, 3-Triethoxysilylpropyl isocyanate, reaction products with polyethylene glycol, polymers with tetraethoxysilane **25498-03-7P**, Methyltrimethoxysilane homopolymer 153315-80-1P, Methyltrimethoxysilane homopolymer, ladder sru **163004-18-0P 184245-59-8P**
RL: IMF (Industrial manufacture); POF (Polymer in formulation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(soiling-resistant coating compns.)

L52 ANSWER 12 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:587936 HCAPLUS
DOCUMENT NUMBER: 131:221269
TITLE: Material for lithographic printing plate, platemaking using it, printing plate therefrom, and printing device using the plate
INVENTOR(S): Yamaki, Takeyuki; Inoue, Minoru; Takahama, Koichi; Sako, Toshiharu; Goto, Akiharu; Ikenaga, Junko; Nakamoto, Akikazu; Kishimoto, Koji
PATENT ASSIGNEE(S): Matsushita Electric Works, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

JP 11249287	A2	19990917	JP 1998-53875	19980305

PRIORITY APPLN. INFO.: JP 1998-53875 19980305

AB The title material has a **photosensitive** layer composed of a silicone resin contg. a photosemiconductive material which changes its surface **hydrophilicity** by light irradn. and a substrate. The printing plate is manufd. by irradiating light with a desired pattern onto the material for forming **hydrophilic** regions and hydrophobic regions. The obtained printing plate and the printing device using the plate are also claimed. Since the **photosensitive** layer has high wear resistance and mech. strength, the printing plate has high printability. The printing plate is easily manufd. and useful for repeated use.

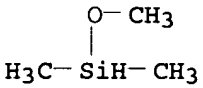
IT **243143-18-2**, Dimethylmethoxysilane-methyltrimethoxysilane-tetraethoxysilane copolymer
RL: DEV (Device component use); USES (Uses)
(platemaking of lithog. printing plate having **photosensitive** layer composed of silicone resin contg. photosemiconductive material)

RN 243143-18-2 HCAPLUS

CN Silicic acid (H4SiO4), tetraethyl ester, polymer with methoxydimethylsilane and trimethoxymethylsilane (9CI) (CA INDEX NAME)

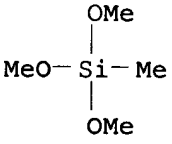
CM 1

CRN 18033-75-5
CMF C3 H10 O Si



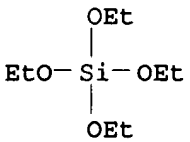
CM 2

CRN 1185-55-3
CMF C4 H12 O3 Si



CM 3

CRN 78-10-4
CMF C8 H20 O4 Si



IC ICM G03F007-00
ICS B41N001-14; G03F007-004; G03F007-075
CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
ST lithog printing plate platemaking printability; printer lithog printing plate; silicone resin photosemiconductive material printing plate; titania silicone resin **photosensitive** printing plate
IT Laser printers
Lithographic plates
(platemaking of lithog. printing plate having **photosensitive** layer composed of silicone resin contg. photosemiconductive material)
IT Polysiloxanes, uses
RL: DEV (Device component use); USES (Uses)
(platemaking of lithog. printing plate having **photosensitive** layer composed of silicone resin contg. photosemiconductive material)
IT 13463-67-7, Titanium oxide (TiO2), uses 13463-67-7, Titanium oxide (TiO2), uses **243143-18-2**, Dimethylmethoxysilane-methyltrimethoxysilane-tetraethoxysilane copolymer
RL: DEV (Device component use); USES (Uses)
(platemaking of lithog. printing plate having **photosensitive** layer composed of silicone resin contg. photosemiconductive material)

L52 ANSWER 13 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:137109 HCAPLUS
DOCUMENT NUMBER: 130:215926
TITLE: Presensitized lithographic plate with **hydrophilic** swelling layer containing silicone fine particles
INVENTOR(S): Goto, Kazuoki; Tabata, Kenichi; Ikeda, Norikazu
PATENT ASSIGNEE(S): Toray Industries, Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11052554	A2	19990226	JP 1997-204313	19970730

PRIORITY APPLN. INFO.: JP 1997-204313 19970730

AB The title lithog. plate possesses at least a **hydrophilic** swelling layer contg. silicone fine particles on a substrate. The lithog. plate shows high ink repellency without desensitization and latitude in use of dampening water and is able to use iso-PrOH-free dampening water.

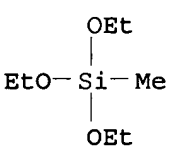
IT **25930-91-0P**, Methyltriethoxysilane homopolymer
RL: MOA (Modifier or additive use); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(presensitized lithog. plate with **hydrophilic** swelling layer contg. silicone fine particles)

RN 25930-91-0 HCAPLUS

CN Silane, triethoxymethyl-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 2031-67-6
CMF C7 H18 O3 Si



IC ICM G03F007-00
ICS B41N001-14; G03F007-075; G03F007-11

CC 74-6 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)

ST presensitized lithog plate **hydrophilic** swelling layer; silicone particle swelling layer lithog plate

IT Polysiloxanes, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(SM 5512; presensitized lithog. plate with **hydrophilic** swelling layer contg. silicone fine particles)

IT Silicone rubber, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(Trefil E 601; presensitized lithog. plate with **hydrophilic** swelling layer contg. silicone fine particles)

IT Silicone rubber, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(di-Me, Trefil F 202; presensitized lithog. plate with **hydrophilic** swelling layer contg. silicone fine particles)

IT Polysiloxanes, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(epoxy, SF 8411; presensitized lithog. plate with **hydrophilic** swelling layer contg. silicone fine particles)

IT Epoxy resins, uses
RL: MOA (Modifier or additive use); TEM (Technical or engineered material use); USES (Uses)
(polysiloxane-, SF 8411; presensitized lithog. plate with

hydrophilic swelling layer contg. silicone fine particles)

IT Silsesquioxanes
RL: MOA (Modifier or additive use); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(presensitized lithog. plate with **hydrophilic** swelling layer contg. silicone fine particles)

IT Lithographic plates
(presensitized; presensitized lithog. plate with **hydrophilic** swelling layer contg. silicone fine particles)

IT 7646-85-7DP, Zinc chloride, reaction products with diazo resin
41432-19-3DP, Diphenylamine-4-diazonium sulfate-formaldehyde copolymer, reaction products with zinc chloride
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(**photosensitive** layer; presensitized lithog. plate with **hydrophilic** swelling layer contg. silicone fine particles)

IT **25930-91-0P**, Methyltriethoxysilane homopolymer
153315-80-1P, Methyltriethoxysilane homopolymer, ladder sru
RL: MOA (Modifier or additive use); PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(presensitized lithog. plate with **hydrophilic** swelling layer contg. silicone fine particles)

IT 25067-63-4DP, Methyl acrylate-vinyl acetate copolymer, sapond.
RL: PNU (Preparation, unclassified); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)
(presensitized lithog. plate with **hydrophilic** swelling layer contg. silicone fine particles)

IT 29300-10-5, Acrylamide-butyl methacrylate copolymer
RL: TEM (Technical or engineered material use); USES (Uses)
(presensitized lithog. plate with **hydrophilic** swelling layer contg. silicone fine particles)

L52 ANSWER 14 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1995:982935 HCAPLUS
DOCUMENT NUMBER: 124:131419
TITLE: Silver halide photographic material and its processing
INVENTOR(S): Takamukai, Yasuhiko; Nagami, Ken
PATENT ASSIGNEE(S): Konishiroku Photo Ind, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 07261306	A2	19951013	JP 1994-52120	19940323

PRIORITY APPLN. INFO.: JP 1994-52120 19940323

AB The material has ≥1 Ag halide emulsion layer contg. inorg. fine particles treated with a silane coupling agent and a non-**photosensitive hydrophilic** colloid layer. The material is processed by using an automatic developing app. for 15-60 s. The material showed high sensitivity and good storage stability.

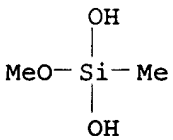
IT **173162-08-8D**, trimethylsilyl-terminated
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(photog. material contg. inorg. fine particles treated with silane coupling agent with high sensitivity and its processing)

RN 173162-08-8 HCAPLUS

CN Silanediol, dimethyl-, polymer with methoxymethylsilanediol, methyloxirane, methylsilanediol and oxirane, graft (9CI) (CA INDEX NAME)

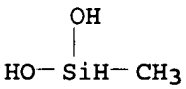
CM 1

CRN 151103-16-1
CMF C2 H8 O3 Si



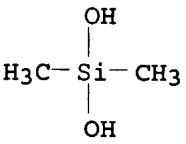
CM 2

CRN 43641-90-3
CMF C H6 O2 Si



CM 3

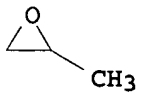
CRN 1066-42-8
CMF C2 H8 O2 Si



CM 4

CRN 75-56-9

CMF C3 H6 O



CM 5

CRN 75-21-8
CMF C2 H4 O

IC ICM G03C001-04
ICS G03C001-035; G03C001-06; G03C005-26
CC 74-2 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)
IT 919-30-2 2530-83-8 149316-65-4, Lucentite SWN
173162-08-8D, trimethylsilyl-terminated
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(photog. material contg. inorg. fine particles treated with silane coupling agent with high sensitivity and its processing)

L52 ANSWER 15 OF 15 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1991:233796 HCAPLUS
DOCUMENT NUMBER: 114:233796
TITLE: Media for improving the bond strength of refractory linings
INVENTOR(S): Borrmann, Frank; Klinger, Wolfram; Krasselt, Volker; Gross, Elke; Morgenstern, Ulrich; Lawrenz, Manfred; Sperling, Brunhilde
PATENT ASSIGNEE(S): Brennstoffinstitut Freiberg, Germany
SOURCE: Ger. (East), 4 pp.
CODEN: GEXXA8
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DD 287247	A5	19910221	DD 1989-332117	19890828
PRIORITY APPLN. INFO.:			DD 1989-332117	19890828

AB The media, comprising selected refractory oxides and **radiation-active** materials, contain an aq., homogeneous, emulsified mixt. consisting of a known oil or oil mixt. 0.01-10, colloidal inorg. binder 5-99, and alkali metal phosphates

(for **hydrophilic** properties) 0.01-10 wt.%, and balance emulsifier-contg. water. These media are esp. suitable for use with lightwt. refractory bricks and fibrous, porous lining bricks. An aq. emulsion contg. rape oil 1, 30% colloidal SiO2 soln. 70, Graham salt 3, Ditalan (NH4 alkenyl sulfate, emulsifier) and water 25 wt. parts, was applied at 1 L/m2 to a lightwt. refractory brick wall, dried, and spray coated with a colloidal SiO2-oxide layer of thickness <1 mm. The penetration depth of the medium was 10 mm, and the bond strength of the coating at room temp. was 2.2 MPa, and did not fail in 20 cycles to 1200° in air.

IT **11099-06-2**, Ethyl silicate
RL: USES (Uses)
(colloidal, binder, emulsions contg., for precoating lightwt. refractory bricks, for penetration and bond strength to oxide lining)

RN 11099-06-2 HCAPLUS
CN Silicic acid, ethyl ester (9CI) (CA INDEX NAME)

CM 1

CRN 1343-98-2
CMF Unspecified
CCI MAN

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

CM 2

CRN 64-17-5
CMF C2 H6 O

H_3C-CH_2-OH

IC ICM C04B035-68
ICS C04B035-66; B32B018-00
CC 57-6 (Ceramics)
IT 7631-86-9, Silica, uses and miscellaneous **11099-06-2**, Ethyl silicate
RL: USES (Uses)
(colloidal, binder, emulsions contg., for precoating lightwt. refractory bricks, for penetration and bond strength to oxide lining)
IT 10361-03-2, Graham's salt
RL: USES (Uses)
(**hydrophilic** agent, emulsions contg., for precoating lightwt. refractory bricks, for penetration and bond strength to oxide lining)

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